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CANNED FOODS AS SOURCES OF THE ESSENTIAL NUTRIENTS

● Early in this century, the existence of "accessory food factors"—the vitamins—was demonstrated by animal experiments (1, 2). Since that time, building upon information established by earlier investigators regarding the calorie, protein, and mineral needs of man, contemporary workers have developed a practical and fairly complete working knowledge of nutrition. At the present time, the fundamental human dietary requirements are considered in terms of some thirty substances of known chemical composition plus a number of factors whose chemical natures still await determination (3). Likewise, the dietary values of foods also may be discussed in terms of these same essential nutrients.

Viewed from a physiological basis, nutritional failures appear to be conditioned either by consumption of a diet deficient with respect to certain of the essential food factors or to altered processes in metabolism which prevent the efficient absorption and utilization of foods (1). Failures of the latter type can be corrected only by elimination of the defects in metabolism, or by administration of nutrients by routes which permit utilization. However, the vast majority of nutritional failures are associated with the consumption of diets deficient with respect to essential food factors. In the following quotation, the facts regarding malnutrition resulting from faulty diet are concisely stated (1):

> "Three facts concerning nutritive failure are becoming increasingly obvious: first, that it does not come solely from lack of vitamins but from deficiency of proteins and minerals as well; in certain of the lower animals, it comes even from lack of fats; second, that in America it is seldom complete; and third, that it is not, as a rule, the expression of a single nutritive fault. More often it is partial in extent and multiple in nature, with a clinical picture that is correspondingly lacking in detail and hazy in outline."

Although nutritional diseases are manifestations of the prolonged consumption of diets deficient with respect to amino acids, minerals, and vitamins, students of the problem agree (2, 4, 5, 6) that elimination of malnutrition is primarily a problem of increasing the variety of foods regularly eaten. Special emphasis should be placed upon the judicious consumption of familiar foods such as meats, (including glandular organs, poultry, sea food, and fish); eggs; milk in its many forms; milk products; fruits and vegetables; legumes; and the whole cereals and their various products. Thus, in its practical application (7), nutrition may be viewed as "an economic, agricultural, industrial and commercial problem, as well as a problem in physiology."

The nutritive values of canned foods have indeed been well established by means of numerous studies (8). By transforming foods, from the perishable condition in which they are harvested, to canned foods which may be stored for consumption in all seasons, the canning industry has rendered great assistance in carrying out the program designed to eliminate malnutrition in America.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

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3. 1940. J. Med. Assoc. Alabama 9, 365.
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7. 1935. Quart. Bull. Health Organ. League of Nations 4, 326.
8. 1939. Canned Food Reference Manual, American Can Company, New York.

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned-foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the sixty-fifth in a series which summarizes, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.

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THE DEVELOPMENT OF A DIETARY DEPARTMENT LAYOUT

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ON THE 94th anniversary of "Ether Day", October 16, 1939, the George Robert White Memorial Building of the Massachusetts General Hospital was dedicated. In the early summer of 1936, the Dietary Department was asked to consider using the ground floor of this building. The first plan submitted by the architects in August of that year showed little more than the shape of the building, and just a rough sketch of the dining rooms and kitchen units. Areas and locations of varying sizes were proposed as the building plans took shape. The old main kitchen and dining rooms had been studied with a view toward remodeling, but the final decision of the hospital to retain the ground floor for service determined the concentration of kitchens and dining rooms on this level of the new building and the removal of these units from the second and third floors of the old Domestic Building. The food store on the ground floor of the old building was retained since it could function as a part of the new unit. In addition, the Baker Memorial kitchen was to continue to prepare the food for Baker Memorial and Phillips House patients.

The determination of the needs of the department in its reorganized form was the first step in the development of the plan. Was the available space adequate for the estimated number of patients and personnel (allowing for reasonable increase in number)? What should be the type of service for patients and for dining rooms? How should the personnel in the dining rooms, etc., be grouped? We had the advantage of being in operation, with practices and policies well established. The groups making the plans were also to carry them out. Thus we had a more definite working basis than is possible in a new organization. An integration of ideas and ideals could be considered, even while molding these to fit the situation and allowing for the recognized standards and established likes and dislikes of individuals.

There were certain general considerations with regard to location and serving arrangements of the dining rooms. The location of the rooms was determined partly by the character of the clientele. The fact that visiting staff and house

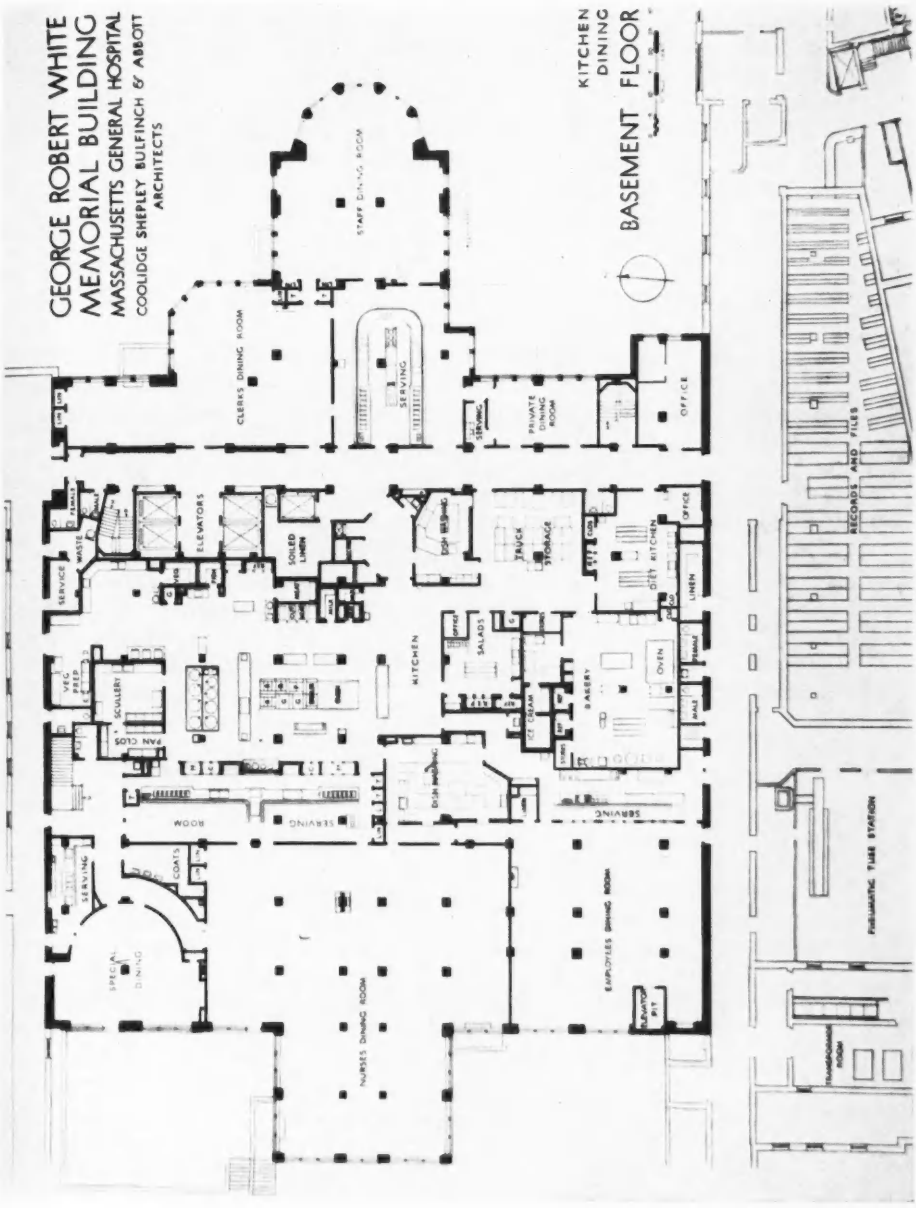
officers desired to dine together determined the relative size of this room. The Pay Cafeteria for other personnel was placed where it could be expanded into another building yet continue to be served from the same unit, since the visiting staff also pay for their meals. Thus the serving unit had to have two counters to divide the service; it had to be separate from the dining room for quiet; and it had to have enough doors to allow for waitress service at dinner. Another requisite was a private dining room to allow for small group meetings and to permit cafeteria service from the counter or waitress service from a small pantry. Our particular difficulty in planning these dining rooms was the dishwashing room. This was finally combined with the truck-washing room and located across the hall where more space was available and noise less noticeable.

The dining rooms for supervisors, nurses, and employees were planned on the opposite side of the building to permit window space (*see* plan). A skylight over the entrance gives daylight as does a large window on a courtyard at the head of the wide stairs. Major considerations here were to give all nurses, both graduate and student, a room large enough to allow for expansion of the nursing staff, and one that would be attractive, quiet, and permit adequate service at peak loads. At first we planned to give the supervisors and women heads of departments part of this room, set aside in some way from the rest, but a separate room with its own serving counter ultimately developed.

The nurses' serving counter presented a particular problem since the nurses had to enter at a point parallel to the counters rather than at a central point facing the counters. By using two counters and having both terminate at a central point, we felt that in actual practice the problem would not be acute as the forming of a line would be prevented by the distance to the farther counter. This has proved to be true.

The general considerations of convenience and quiet also determined the arrangement of the employees' dining room. Here, as for the nurses, the serving unit was placed in a separate room with a glass window partition to permit supervision. The west dining rooms were located in relation to the placing of the future rest and locker rooms of the two groups—the nurses in the basement of the Phillips House and the employees in the basement of the Moseley Building. A central dishwashing room was placed between the two dining rooms. This room had to be considerably altered to permit the best possible arrangement of dish tables and machines.

With regard to the service for the patients, the advantages of both centralized and decentralized service were considered. Opinions were requested from various sources, papers were read, and visits made to other hospitals. Both plans were worked out roughly but the centralized type eliminated itself in our particular setup. Five floors—administration, x-ray, laboratory, and operating—between the kitchen and the eight patient floors made dumb-waiter or trayveyor system impractical; nor was there space on any patient floor for a unit which would serve the other patient floors. Also, another ward-patient building, the Bulfinch Building for medical patients, was to be served from the same main kitchen and already had the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PNEUMATIC TUBE STATION
SERVICE
WASTE
ELEVATORS
SOILED LINEN
DISH WASHING
TRUCK STORAGE
DIET KITCHEN
LINEN
KITCHEN
SALADS
ICE CREAM
BAKERY
OVEN
VEG PREP
SCULLERY
SERVING
COATS
SPECIAL DINING
NURSES DINING ROOM
EMPLOYEES DINING ROOM
ELEVATOR PIT
THERMOMETER ROOM

decentralized type of service. It would have been interesting to have a centralized system for comparison with the decentralized in use at the Baker Memorial and Phillips House and for the teaching of student dietitians and nurses.

The decision in favor of decentralized service immediately determined the location of the truck room, the cold-food preparation units, the point in the kitchen where the hot food would be put on the trucks, and the service elevator. The desire to have the trucks near the cold-food preparation units decided the location of the bake shop, the salad room, and the diet kitchen. While it is usually planned to route trucks through the kitchen to pick up the cold foods, what actually happens is that trucks are loaded while they are heating, so we placed the trucks in aisles for easy access. The number of patients' meals served from this kitchen is less than 25 per cent of the total; therefore it seemed logical to concentrate the patient service in one end of the kitchen to allow for the planning of a more efficient layout for the bulk of the food preparation.

The established location of the food store, which was to be retained, determined the point of entry for raw material into the kitchen area. The diet kitchen, used largely for preparation of nourishments and as a headquarters for the therapeutic dietitians, brought that group across the hall from the office of the administrative dietitians.

The arrangement of refrigeration service for the kitchen proper is more complicated to explain. From the first, the plan had been to keep refrigerators near their respective food preparation units. There are two for dairy products, one for milk, butter, and eggs for kitchen use, and one for the same products to be used by the dining rooms, as none of the serving units has large storage space. There is also a box for left-overs in the center of the kitchen. A large box for bulk meat opens off an alcove planned for preparation of meat in the kitchen, and facing the oven and range units is a refrigerated space with metal runners on the floor, no thresholds, and four doors to take four movable racks on rubber-castered wheels. These racks hold the pans of meat ready for the oven and permit bacon, liver, etc., to be panned in spare time and conveniently refrigerated until needed. There is also a reach-in box in the meat cutting section for cold meat, cheeses, etc. A separate refrigerator is planned for fish, another small one near the service exit for garbage, and a large one opening directly off the vegetable room for vegetables. The diet kitchen has a reach-in box centrally located and at right angles to the working spaces. The baker has two boxes, also at right angles to the working spaces, one for supplies and one for finished products. The salad room has a walk-in box for supplies and a large reach-in box planned to take six hundred salads on trays. The ice cream unit has a low temperature refrigerator with an anteroom opening off the freezing room.

As to the refrigeration in the serving units, those for the supervisors' and employees' dining rooms have commercial wall boxes. Both sides of the U-shaped counter for the east dining rooms are refrigerated under the cold pans and there is another refrigerator in the center section, one-half of which opens on either side. In all counters except the supervisors, an ice cream cabinet is built-in. The refrigerators for the nurses' serving

room are built into the wall in back of the counter and open front and back so that the cold food may be put in on the kitchen side and taken out from the counter side when needed. A like arrangement exists for the hot food and serving dishes. The top part of the wall cabinet used for food is heated by electricity, and the bottom part, where the dishes are placed, is heated by steam. An additional feature of the connecting wall is the placing of the coffee urns on the kitchen side with draw-off connections going through and faucets opening on the service side.

Immediately in back of one wall section is a table with egg-boilers adjacent to the two fry-top ranges and one broiler, all of which constitutes a short-order cooking unit used particularly for egg cooking at breakfast. Two large back-to-back, heavy-duty ranges form the end of the range unit with one smaller range on the other side and next in line are two fryers and another broiler, back of the one on the first side. The whole is arranged as a unit, flat across the top, and all spaces are covered on top and sides with removable cover plates. The reel oven at the lower end opens facing two working tables on wheels. For convenience, wheels have been put on as many racks and tables as feasible. One feature that is working out particularly well is the racking of pans of meat, etc., to be refrigerated until needed. The racks are equally usable when taking pans from the oven.

In the potato room, the two potato peelers on each side of a three-section sink are raised to empty directly into the two end sinks. The vegetable room opposite has a single and double sink in a continuous wall counter. The section was planned next to the service entrance to facilitate the cleaning and preparation of the vegetables. The three stack steamers were planned as part of the vegetable unit, and the smaller steam kettles for the cooking of vegetables were put on the end of the kettle unit nearest the vegetable preparation. The larger stock kettles are at the other end. Two kettles are used very efficiently for roasting. We find these particularly useful for stews, Swiss steak, baked ham, etc., where long, slow cooking is desirable, and we often prefer to roast meats in them. An unusual feature of the kettle unit is that all are enclosed, the net effect being that of one large inverted pan. Doors open on the sides and ends to facilitate cleaning of the tile base. There are no draw-offs. The waste pipes empty into removable wire baskets in two sinks set in the floor of the tile base.

Between the kettles and the ranges is the long cook's table with a bain marie in the center and sinks on each end. There are two large ventilating hoods, one over the range and oven unit and the other over the kettles. They are finished inside with stainless steel and outside with tile to match the salt-glazed brick walls of the kitchen. The floor is red quarry tile and the equipment stainless steel. The scullery is conveniently located and has a continuous table around the two sides of the room with a double wash sink and single rinse sink containing steam coils and a basket on an overhead trolley which allows utensils to be let down into the sink for degreasing and efficient rinsing before being put away on racks in the clean pan room.

In the lower end of the kitchen the units are separate rooms with the excep-

tion of the salad room, the north and east walls of which are only part-way partitions. The dietitian's small office commands a view of the kitchen and salad room. The latter has a double sink with drainboards, a large work table for salad making, and a sandwich table with ice pan for sandwich fillings. The diet kitchen has large work tables at right angles to the refrigerators, storage closets, range and sink. The dietitian's desk is in one corner and opposite this is a study corner where the nurses write their diets and have their conferences. The bake shop has a work table at right angles to the refrigerators and storage closets. Next to the work table are the kettles, steamers, doughnut fryer and baker's stove, all under a hood. An unloading table is in front of the reel oven and a pot sink on the other side of the room.

The amount of work represented in the development of the plan could not be estimated. The problems involved seemed endless and required constant attention. However, the data collected are invaluable. The writing of the specifications for the fabricated equipment, alone, was an education in itself. A great deal of technical information was obtained in working with the architect, not to mention the respect gained for the value of detail in planning and re-planning every corner of the layout.

Certainly any dietitian should welcome the opportunity of making plans for her department not only because of the advantage to herself but also because of the assistance she can give in planning an efficient food department. When she has the wise guidance of an expert in planning hospitals and a hospital director who understands the needs of her department, she is fortunate indeed.

* * *

The Dietitian as an Educator

Perhaps the hospital dietitian does not do one quarter of all the teaching that is done in the hospital, but she approaches that figure. The hospital administrator is ever mindful of the educational work of his dietitian carried on with student nurses, resident staff, attending staff, medical students and patients.—*Perkins, A. H., The dietitian—her important contribution to hospital service, Hospitals, August, 1940.*

Kitchens and Food Service

Recognizing the fact that practically all food served in hospitals has a therapeutic significance and that the whole commissary department should be under the direct supervision of the dietitian, the present tendency is to provide little or no physical separation between the central special diet kitchen and the general kitchen, contrary to past practice.—*Walsh, W. H., Modern trends in hospital planning and equipment, Hospitals, August, 1940.*

THE ESTIMATION OF THE PATIENT'S HOME DIETARY INTAKE[1]

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A QUANTITATIVE estimate of the nutritive value of the patient's usual food intake has become of particular interest to the physician in the correlation of diet with the clinical and laboratory findings. As a result, he has requested from the dietitian a quantitative appraisal of the home dietary which will be available for use in diagnosis like that of a report of a laboratory test.

This means that the dietitian is faced both with the problem of obtaining reliable information regarding the usual food intake and the proper evaluation of the data after they have been obtained.

There are several possibilities for obtaining information regarding the home dietary. The patient may be asked for an account of his food habits only, or he may be asked to keep a record of his food intake or he may be asked for both a preliminary history and a diet record or records.

In some cases a preliminary account of the dietary may be fairly reliable. In other cases, irregularities in food intake and inaccuracies in estimating the amounts actually eaten make the information of doubtful value. For this reason, it is probably desirable to check the preliminary diet history with a record of the actual food intake. However, the value of such a record depends obviously on the accuracy of the quantitative technic. In this respect, the measured food intake is probably less satisfactory than the weighed. Measuring cups may be loosely or tightly packed, measuring utensils may not be standardized in size and some articles of food such as pastry, meat, doughnuts or apples, do not conform to measuring cups, teaspoons, tablespoons or rulers. In addition, the patient frequently becomes overconfident and substitutes estimations for actual measurements after a short time. Consequently, the interpretation of measures in terms of weight becomes a very hazardous procedure.

A definite improvement can be made by providing the patient with a gram scale so that he can weigh his food. Usually the patient responds with considerable interest and the scale itself has the effect of impressing the patient with the importance of accuracy in his food record. However, a food record alone may be insufficient since it may not be typical of the usual food intake. In this respect, the preliminary diet history will supplement the food record. However, if the preliminary history and the food record do not correspond, two assump-

[1] Report of Subcommittee VI of the Diet Therapy Section presented before the American Dietetic Association, New York, October 24, 1940.

[2] Chairman of committee consisting of Frances MacKinnon, Dorothy Hacker, Martha Warne, Ruth L. Huenemann, Mary Hanaher, Mildred Levinson and Helen Whitcomb. Appreciation is extended to Dr. Hazel Munsell and Mrs. Bertha Burke for valuable suggestions and contributions.

tions can be made. Either the food record is not representative of the usual food intake or the patient is not fully aware of exactly what he does eat. Consequently, it may be desirable to repeat the diet records at certain intervals if more accurate information is needed.

The first problem is to obtain from the patient an account of the foods eaten, the methods of storage and preparation, and the amounts ordinarily used. This demands ingenuity on the part of the dietitian. *What methods can be used to obtain this preliminary diet history and what kind of a summary form should be used to present this material to the physician?* A committee of the Diet Therapy Section of the American Dietetic Association has been studying these particular questions and a method has been devised which may be useful in suggesting an approach to the problem.

PRELIMINARY DIET HISTORY

Three devices may be used to obtain a preliminary impression of the diet history. The patient may submit a "typical menu"; a list of individual foods may be considered for frequency of use, for methods of preparation and storage, and for amounts usually consumed; and the family food purchases may be used to indicate the trend of the dietary intake. The following steps are suggested:

1. Obtain a "typical menu" from the patient of foods used a.m., noon, p.m. and between meals. Food models will be a convenience in estimating the amounts ordinarily used. The previous 24-hour or 48-hour intake might be considered a logical starting point. However, the patient frequently does not consider this typical and it will have to be appended.

A definite impression is gained from this account, particularly regarding the regularity of meals and the distribution of the food. However, it is usually quite incomplete. Certain commonly used foods may have been omitted, the frequency with which certain foods are consumed is still vague, and the methods of storage and preparation of foods must be considered. For this purpose, a list of individual foods which can be checked for these points and again for quantities eaten will be valuable.

2. Use the Food Intake List (table 1) to obtain an impression of how frequently particular foods are used and to estimate again the quantities used. Where the storage and preparation of food is noted, it may be desirable to consider how the material is handled after purchase, the method and time of cooking, the disposal of cooking water and possibly the time elapsing between the purchase and the use of fresh materials.

3. Obtain an account of food purchases and the distribution of foods among the members of the family. In some cases the cost can be used to give a further indication of the sizes and amounts used.

4. Compare the three sources of information: the "typical menu", the list of individual foods, and the food purchases. Discuss discrepancies with the patient.

5. Make up a revised list of foods actually eaten and amounts ordinarily used by the patient. Enter in final column of work sheet (table 1).

EVALUATION

The evaluation of this material in terms of carbohydrate, protein, fat,

TABLE 1

Name..... Unit No..... Data.....
Number in family.....
Ages and sex.....

*Food Intake**

FOOD	HOW FREQUENTLY USED	AMOUNT PURCHASED	COST	STORAGE AND PREPARATION	ESTIMATION OF AMOUNT USED DAILY BY PATIENT
Milk and its products:					
Raw milk (whole or skim)					
Pasteurized milk (whole or skim)					
Evaporated milk					
Condensed milk					
Irradiated milk					
Buttermilk (whole or skim)					
Cocoa					
Cafe au lait					
Cheese (cream or Cheddar)					
Cottage cheese					
Milk puddings					
Milk soups					
Ice cream, home-made					
Ice cream, commercial					
Eggs:					
Meat:					
Pork or ham					
Liver					
Other glandular meat					
Other meat, kind					
Fowl					
Fish					
Other sea foods					
Vegetables:					
Green and leafy					
Spinach					
Chard					
Kale					
Escarole					
Endive					
Dandelion greens					
Lettuce (leaf or head)					
Asparagus					
Green beans					
Peppers					
Yellow type					
Carrots					
Squash					
Sweet potato					
Cabbage family					
Cabbage					
Brussels sprouts					
Cauliflower					
Broccoli					

* Foods have been arranged for convenience in consideration of protein, carbohydrate and fat values. Vegetables and fruits have been classified, in part, in the grouping suggested by Dr. Munsell (1) for evaluation of vitamin content.

TABLE 1—*Continued*

FOOD	HOW FREQUENTLY USED	AMOUNT PURCHASED	COST	STORAGE AND PREPARATION	ESTIMATION OF AMOUNT USED DAILY BY PATIENT
Vegetables—Continued:					
Root vegetables					
Kohlrabi					
Turnips					
Rutabagas					
Seeds					
Peas					
Lima beans					
Navy beans					
Kidney beans					
Corn					
Lentils					
Potatoes, white					
Other vegetables					
Fruits:					
Orange					
Grapefruit					
Tomato					
Banana					
Lemon					
Pineapple					
Other fruit					
canned					
dried					
fresh					
Cereals:					
Whole grain					
Refined					
Reinforced					
Bread (brand):					
Whole grain					
Refined					
Reinforced					
Macaroni or spaghetti:					
Corn meal (yellow or white):					
Sweets:					
Sugar					
Molasses					
Honey					
Jelly					
Pastry					
Cookies					
Cake					
Candy					
Sweet rolls					
Soft drinks					
Doughnuts					
Gelatin desserts					

TABLE 1—*Concluded*

FOOD	HOW FREQUENTLY USED	AMOUNT PURCHASED	COST	STORAGE AND PREPARATION	ESTIMATION OF AMOUNT USED DAILY BY PATIENT
Popcorn:					
Nuts:					
Fats:					
Cream (sweet or sour)					
Butter					
Butter substitutes					
Olive oil					
Oil dressings					
Bacon					
Lard					
Chicken fat					
Gravy					
Other fats					
Alcoholic beverages:					
Beer					
Wine					
Distilled liquor					
Other beverages:					

minerals and vitamins presents a complex problem. There is variation due to the source of food, to the sampling, to the variety, to the season of the year, and to the differences in storage and preparation. In addition, there is considerable instability in the assigned food values due to the lack of reliable and convenient methods of assay, particularly in the case of vitamin values. However, new methods of assay and improvements in older methods are being developed. This means that the dietitian must be constantly on the alert for food values which have been determined by reliable methods of assay.

Also, as previously stated, the estimation of the amounts of each food actually used by the patient can at best be only an approximation. Therefore it would seem inappropriate to attempt to apply absolute values to the data. A range of values or an average based on a food grouping will probably provide a more satisfactory figure.

SUMMARY FORM

The summary form (table 2) in which this material may be submitted to the physician has been organized to include: (1) a summary of the usual daily food intake, (2) the evaluation in terms of calories, carbohydrate, protein, fat, minerals, and vitamins, (3) pertinent information, and (4) a brief statement of the dietitian's impression of the present dietary status of the patient together with an indication of the reliability of the data obtained from the patient.

In reporting the usual food intake, it was considered of greatest value to summarize the foods used daily rather than to attempt to make up a menu that might be considered representative. The information gained from a sample menu regarding regularity of meals and

TABLE 2

Name..... Unit No..... Date.....

Trend of Present Dietary Intake

I. *Summary of usual daily food intake:*

Amount of:	Amount of:
Milk	Potato
Cheese	Bread
Eggs	Cereal
Meat, fish or fowl	Sweets
Vegetables	Fats
Fruit	Other foods
	Beverages

II. *Evaluation:*

A. Approximate analysis	B. Tentative standards
1. Calories.....	1. Calories.....
Carbohydrate.....	
Protein:	Protein:
good quality.....	
poor quality.....	
Fat.....	
2. Minerals:	2. Minerals:
Calcium.....	Calcium.....
Phosphorus.....	Phosphorus.....
Iron.....	Iron.....
3. Vitamins:	3. Vitamins:
Vitamin A.....	Vitamin A.....
Thiamin.....	Thiamin.....
Ascorbic acid.....	Ascorbic acid.....
Vitamin D.....	Vitamin D.....
Riboflavin.....	Riboflavin.....

III. *Pertinent Information:*

How long has present diet been in use?
Any previous special diets? Kind? How long?
Vitamin preparations used?
Regularity of meals?
Distribution of food?
Where is food eaten?
Appetite?
Food dislikes?
Food idiosyncrasies?
Income?

IV. *Impression:*

Diet Recommendations

distribution of the food may be included under pertinent information.

The evaluation includes an approximation of the carbohydrate, protein, fat, mineral and vitamin content of the diet and the tentative standards on which the nutritive requirements are based. It is probably more accurate to present these figures as a range in order to avoid an impression of greater accuracy than is possible.

Pertinent information includes that which will aid the physician in further correlation of diet with the clinical findings. Also, information is included which will be of value in making the diet recommendations suitable for the patient.

CONCLUSIONS

A method has been presented by which an impression may be gained regarding the trend of the patient's home dietary intake. It is probably desirable to consider this information of suggestive value only and where more reliable information is needed, the preliminary diet history should be checked by a diet record or records.

REFERENCE

(1) MUNSELL, HAZEL: Planning the day's diet for vitamin content. J. Am. Dietet. A. 15: 639, 1939.

Lunch Counters

THE various wage and hour laws adopted in many states require hospitals to so adjust wages, especially for maintenance employees, as to clearly indicate the monetary value of meals served and, to avoid arguments about the value of such meals, the trend is to fix wages exclusive of meals and to provide facilities whereby all employees may purchase whatever they desire at current rates. Thus, the lunch counter and soda fountain have appeared in the most modern hospitals apparently to the satisfaction of doctors, nurses, visitors, employees and the hospital administration. So long as this activity is conducted as a convenience to the institution and does not develop into a business venture competing with other local business enterprises, the hospital lunch counter deserves encouragement since it often meets a very real need. A lunch counter of the type here contemplated should be located in a place readily accessible to all employees, but with adequate space to prevent traffic congestion. It should be well equipped with every facility for serving short orders, sodas and ice cream, sandwiches, coffee, etc., and while under the control of the dietitian, there should be some one in immediate charge well acquainted with the conduct of a commercial lunch counter.—*Walsh, W. H.: Modern trends in hospital planning and equipment, Hospitals, September, 1940.*

MENU PLANNING AND FOOD COST CONTROL[1]

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MENU planning to a food administrator is the constantly interweaving thread in administrative control which frequently determines the success or failure of the food service. One should bring a zest and a visualizing facility to this responsibility which should offset the idea-deadening element of daily repetition and routine and leave one with a sense of superior accomplishment when menus are completed.

You have come to this conference for inspiration as well as to have trends in management, education and nutrition emphasized and interpreted so that you will be in a position to apply this information immediately in your job. Since this is true my paper will not deal with the usual tools of menu planning with which you are already well equipped, such as the nutritional constituents of foods, the importance of color, texture and flavor contrast, food quality, and desirable variety and appearance when served; these you use almost automatically whenever you plan a menu. We can profitably, however, give careful consideration to those menu planning tools essential to perfected control of raw food costs in relation to sales as well as customer satisfaction and my paper will therefore be limited to this approach.

Once a manager catches the full significance of menu planning as the vital factor in daily operation control in the service of food to the public, whether in school cafeteria, restaurant, hospital, or college residence hall, nothing can dissuade her from a diligent pursuit of its possibilities. Since menu planning is one of the more if not the most important of the administrative responsibilities of the director, it should never be delegated to her subordinates except in well-controlled situations where her interest can continue to be the motivating force behind the finished menu. An example of a well-controlled situation is found at Wellesley College. Here the director of dining halls, Mrs. Covey, has a menu planning conference once a week to which the six graduate dietitians on her staff take turns in bringing a week's menus planned to meet the needs of all the dining halls—freshman, senior and cooperative. After discussion and analysis by the staff, the menu is accepted by the group subject to a final study by the director. The director, in turn, plans a week's menu which is subjected to the same analysis as those of her subordinates.

The menu affects the overhead costs, the raw food costs and volume of sales or total income more than any other single management decision. Therefore menu planning commands both interest and respect as one of the most powerful tools in administrative control.

WORKING MENUS AND SALES MENUS

Many of the pitfalls in menu planning could be avoided if this responsibility

[1] Read before the Food Service Directors Conference, Baltimore, November 4, 1939.

were more closely correlated with its two major points of control—production and sales. When we think of the menu as a "working" menu and a "sales" menu, our approach is immediately changed.

Working Menu. The working menu should be so specifically planned in detail that all later activities entailed in the production and service of the meal are simplified, errors and omissions prevented, and the food cost percentage controlled for each day or each meal and kept within the limits previously set up.

Sales Menu. The sales menu is the working menu replanned: first, as to the sequence in which items will be printed or displayed on the menu board in order to increase the volume of sales and decrease the food cost percentage; and second, as the items are re-expressed or interpreted to catch the interest of customers and simplify their selection of a meal. Kugler's restaurant in Philadelphia, famed for its menu merchandising, attempts to capitalize and dramatize the many sources of its food supplies. This is done by using descriptive terminology on the menu. Results have justified Kugler's conviction of the importance of the printed menu as a perfected sales instrument.

The food cost percentage can best be controlled if we include no item or combination on the menu that is not priced at the proper ratio of raw food cost to selling price. It will also be controlled if we describe our menu items and locate these on the menu in such a way as to lead the clientele to select those items having that day's greatest profit margin. These higher profit items may be due to "market buys" caused by unusual and temporary market conditions that have made a lower wholesale price possible when we placed our market orders, or to price changes we have initiated.

SCIENTIFIC MANAGEMENT APPLIED TO MENU PLANNING

Our first need here is the simplification of the mechanics of planning the "working" menu. The mechanics of menu planning include first and most important, a quiet place to plan the week's menu without any interruptions—a crowded desk in the center of a busy kitchen would not meet this need for concentration. Second, we need a well-equipped working center with printed or mimeographed forms and office tools in working condition. Third, we need a well planned and efficient filing system with all the records available for intelligent menu planning, conveniently filed and readily usable. This system could profitably include a minimum of ten types of factual data as follows:

1. *Last year's complete file of all menus in calendar sequence.*
2. *Perpetual inventory card files* that show the store-room record for a 6-month period, and each day's receipts of food supplies and issuances to each production and service center. This file should also include the cost of the food received and issued, as well as the physical inventory.
3. *Daily food cost sheets,* if simply drawn up and available each morning for comparison with the preceding day's record, can be used not only for production control of quality food but also to reduce waste, control food cost percentage, and serve as an effective check on the quality of menu planning. The necessary

data can also be obtained from the perpetual inventory mentioned above or from other records, depending upon the system of storeroom control.

Selma Streit, business manager of the Scottish Rite Dormitory, University of Texas, has used a modified form of this daily cost sheet for the past fourteen years with marked success. Her "Food Cost Record" gives more extensive information than a restaurant might consider necessary on the "Daily Food Cost Sheet" report. All guests eat all their meals at the dormitory which provides a more stable situation. This record lists the day's menu on a line with the amounts and costs of food commodities used. Each food commodity used is tabulated according to the nutritional classification of foods by groups, recommended by Dr. Mary Swartz Rose in *A Laboratory Handbook for Dietetics*, that is: Class I, cereals and cereal products; Class II, milk, ice cream, chocolate, cocoa, etc.; Class IIIa, dried legumes; Class IIIb, other vegetables and fruits; Class IV, fats and oils; Class V, sugars, syrups, jams, candies, starches; Class VI, meat, eggs, cheese and skim milk. The total expenditure for each day's food in a given classification and the grand total expenditure for the day are noted in red to make the expenditures stand out on the record. Such a record makes it possible to calculate the nutritional adequacy daily, weekly or monthly by the use of the method outlined on pp. 48–55 Problem X in Dr. Rose's book entitled "To abbreviate dietary calculations of total calories, protein, fat and carbohydrate when large quantities of food are involved." You will note from Illustration I[2] that Miss Streit can quickly check the nutritional adequacy of the food eaten as well as the effect of the menu on the total expenditures for food commodities and the resultant effect on food cost to food income percentage.

4. *Standardized Quantity Recipes and Cost Cards.* Standardization of order of ingredients, terms, quantities, and method of combining is merely the first step. The job is complete when in addition the size of the cooking utensil, total yield of the recipe, accurate measure or weight of a portion and total portion yield, together with size and style of serving dish or glass, are arrived at.

Illustration II shows two of the standard recipes that Constance Hart, director, Department of Lunchrooms, Board of Education, Rochester, New York, sends to the school lunchroom managers from time to time. Each sheet fits into an 8½ x 11″ standard loose-leaf notebook. Her system of recipe cost control using standardized recipes, control price booklet of food costs and supplementary sheets of new recipes, illustrates the possibilities of standardized quantity recipes and cost cards. Miss Hart states:

> The managers are kept up to date on current prices and they in turn refigure any recipes where the cost of the items

[2] The ruled form 16″ × 32″ provides for a record of 15 or 16 days on each side of the sheet. Thus daily food cost data correlated with each day's menu is recorded for one month on a single sheet. Since the form is large, a condensed record of two food items and the daily menu for two days of one week is used to illustrate the possibilities of a Food Cost Record of this type.

ILLUSTRATION I

CONDENSED FOOD COST RECORD

Scottish Rite Dormitory, University of Texas

DATE	VEGETABLES		MEATS		MENU			TOTAL
December 1938	Fresh		Fresh and Canned		Breakfast	Luncheon	Dinner	Cost
Thursday 1	Aspara.	$ 5.25	Bacon	$ 7.20	Orange Juice	Broiled Ham	Tomato Juice	
	Peas	6.36	Hams	28.50	Breakfast Food	Baked Pears	Lamb Chops	
	Peppers	.10	Lamb	30.10	Hot Cakes—Syrup	Grits	Parslied Potatoes	
	Lettuce	3.75	Round	.30	Bacon	Greens	Dried Lima Beans	
	Mustard	1.60			Coffee, Milk	Tomato, Lettuce,	Eggplant	
	Eggplant	1.65				Avocado Salad	Pickles—Celery	
		$18.71		$66.10		Cherry Cobbler	Rhubarb	
						Milk	Choc. Ice Box Cake	
							Milk	$172.91
Friday 2	Cabbage	$ 1.25	Liver	$ 9.00	Grapefruit	Liver and Bacon	Grapefruit Juice	
	Carrots	1.60	Bacon	7.20	Breakfast Food	New Potatoes	Fried Fish	
	Radishes	.60	Round	.30	Baked Eggs	Carrots	Mashed Potatoes	
	Beets	.90			Canadian Bacon	Cabbage Slaw	Harvard Beets	
	Celery	2.75			Toast	Strawberries	Peas	
	Potatoes	2.00			Coffee, Milk	Cake	Radishes	
	Tomatoes	1.50				Milk	Cucumber Fingers	
		$10.60		$16.50			Ice Cream	
							Milk	$111.81

Total for week	$998.98
Average Cost per Day	142.71
(324) Average Cost per Student	.44+
(381) Average Cost per Person	.37+

ILLUSTRATION II

BOARD OF EDUCATION—DEPARTMENT OF LUNCHROOMS
ROCHESTER, NEW YORK

ASPARAGUS HAM ROLL-IES

Size of Portion, 1¼ oz. ham
3 stalks asparagus
1 slice toast

Number of Portions, 50
Total Yield

Number of Portions.....
Total Yield.....

Quantity	Ingredients	Quantity	
1 lb.	butter	$.355	$.355
¼ cup	prepared mustard	.125 qt.	.0078
50 slices	toast		.25
10 lb. (150 stalks)	large asparagus	.18 lb.	1.80
4 lbs.	sliced square ham (4½" dia. cut No. 10 Hobart)	.31 lb.	1.24
3⅛ qt.	cheese sauce No. 2	.275 qt.	.86

Cream butter and mustard together. Spread on toast. Put one layer in shallow baking dish. Roll 3 stalks of cooked asparagus in ham slices. Place on toast and pour cheese sauce over the center of each roll. Bake at 350°F. for 15 minutes.

Total Cost *$4.513* Cost per Portion *$.091*

LIMA BEAN SUPREME

Size of Portion, ⅔ cup

Number of Portions, 50
Total Yield, 9⅞ qts.

Number of Portions.....
Total Yield.....

Quantity	Ingredients	Quantity	
9⅞ lb. E.P.	lima beans (Price figured on white frosted)	$.20–40 oz.	$.75
7½ oz.	butter	.355	.165
¾ lb.	flour	.027 lb.	.01
3¾ qts.	milk, scalded	.105 qt.	.394
1½ T.	salt		
¾ tsp.	pepper		
1½ lb.	grated N.Y.S. cheese	.25 lb.	.281
¾ lb.	chopped pimientos	.17–15 oz.	.135
½ cup	tomato catsup	.54—#10	.02
7½ oz.	soft bread crumbs	.08 lb.	.037

Drain cooked lima beans. Make white sauce with ¾ lb. butter, flour and milk. When thickened add salt, pepper, cheese, pimientos, catsup, and lima beans. Turn into buttered baking pan and top with buttered crumbs (7½ oz. crumbs and 1½ oz. butter). Bake at 350°F. for 30 minutes or until crumbs are brown.

Total Cost *$1.792* Cost per Portion *$.0358*

is different from those in the control booklet of prices. Not only individual recipes but also plate lunch combinations are figured on these control prices and each manager must make her own adjustments. These control prices are based on average prices for 1937 and are higher in most cases than current market prices. The recipes are left figured at this higher cost with the intention of forestalling the sale of any items under cost by managers who do not figure as closely as they should.

It is only by the use of records such as these and the resultant effective cost control that Rochester schools can afford to give outstanding values such as their 5-cent plate specials. An example is the Broiled Hamburg Sandwich Plate Special which includes succotash made of canned corn and dried Lima beans and mashed potatoes, both served in #30 scoop portions.

Miss Hart has found that the total raw food cost of this 5-cent special plate combination must not at any time exceed $.026, *i.e.* 52 per cent of the sales price. If the food cost exceeds this, the combination, because of its popularity and resultant sales volume, will throw the total food cost percentage for the day out of balance.

Cost cards for each recipe should also be calculated for the four seasons of the year and a maximum food cost decided upon below which you can afford to use the recipe on the menu.

5. *Meal Count Record.* An accurate, not merely an estimated daily individual meal count or record of number of portions sold of each item or combination on the menu is valuable. This record can be kept separately but should be summarized for use on the Daily Cost Sheet.
6. *Seasonal Lists of Menu Items.* These lists should note alphabetically the names of tested recipes or food items that you can afford to sell during each of the four seasons (three, if school lunchroom). The raw food cost per portion, both à la carte and table d'hôte, and sale price should be recorded in three columns opposite the name of the dish. Carefully tested "sales" titles should be used in compiling these seasonal lists and the items permitting the best profit margin during each season could be starred for added emphasis. Without such lists we find ourselves with a dearth of ideas when planning menus, and repetition is the result. Who would think from a study of some menus that there are 24 fresh fruits and 46 fresh vegetables available in the wholesale markets almost the year round?
7. *Menu-Cook Book File.* There has been a noticeable increase in the publication of cook books giving menus planned for use with the recipes. The list of references to use in menu planning included with this paper is the result of careful analysis of such available books at present.

We all know that one of our problems as food administrators is catering to food likes and dislikes of the groups we feed, as influenced by inherited tastes, food habits, personal idiosyncrasies and racial and social customs. Is there any reason to believe that we, as managers, are necessarily less biased or set in our convictions of what foods "go together," than our guests? Frequent reference to menus planned for the typical Ameri-

can family should help to keep us open-minded and venturesome in planning menus for the large groups with complex and varying tastes. Comparison of the menus and personal tastes of the dietitian or manager who plans the menus often shows a close correlation. There is lack of imagination in the too frequent roast beef, pan browned potatoes and buttered beets, or the equally wearisome roast lamb, brown gravy, mashed potatoes and green peas. Such combinations, repeatedly, are evidence of a stereotyped planning and the appended list of menu-recipe books can serve as inspiration for pleasing variety.

8. *Daily Records of Plate Waste and Left-Over Food.* These two records by meals are invaluable as a check upon food quality, degree of accuracy in anticipating sales, and in planning correctly for production, and as added factual data which when correlated with other records previously mentioned, show how successfully we have planned menu combinations that appeal. Any data that helps secure maximum guest satisfaction at a minimum cost to our institution should be worth the cost of recording.
9. *Market Reports.* In Boston we have six different daily, weekly and monthly retail and wholesale market reports that are valuable aids in menu planning. Most helpful are the "Farmers' Produce Market Report", issued by Massachusetts Department of Agriculture, Division of Markets, cooperating with Boston Market Gardeners' Association, and the "Daily Egg and Milk Report" of the U. S. Department of Agriculture, Bureau of Agricultural Economics. In other cities or localities similar reports are available which it will be profitable to follow.
10. *Menu Check List.* Once the week's menu has been planned, whether a five-day week of noon menus or a seven-day week of three meals a day, it should be checked immediately, not the next day or an hour later, point by point against a carefully worked out menu check list. The menu should be checked again the next day after it is "cold" in order to detect errors in judgment, cost or planning. A check list should be drawn up to fit each individual situation and designed to obviate those shortcomings too frequently evident in menus planned for large groups.

MENUS AND FOOD COST CONTROL

A "working" menu should be posted at each production or service center with specific instructions for each unit, together with the "sales" menu as printed for the guests. Such a procedure serves several purposes: it prevents errors or omissions, shows the chef or employee the weight you attach to the control of even the minutest details which may affect the finished quality of the food, and holds each employee to a high standard of work. When these instructions are posted along with the "sales" menu it helps the employee to visualize the appearance and taste of the food for which he is responsible.

Daily Operation Control. The work schedules of employees should correlate with the menu but it is an exceptional dietitian or manager, indeed, who does not at some time overload employees on a given production or service center while others do not have enough to do. If such a situation repeatedly occurs, a careful analysis of the division of work between centers should be made in relation to the type of menu served, to

determine if work distribution in itself is poorly planned. Should this distribution prove to be balanced then perhaps the extensiveness of the menu or elaborateness of preparation must be modified if we are to effect an equitable distribution of labor. A former administrative student dietitian from the Women's Educational and Industrial Union, in describing the popularity and the excellent administrative control of a famous mid-western restaurant, inadvertently gave an example of the effect a menu has on the distribution of work between employees. This restaurant served a special combination each day and priced it two or four cents less than the regular price. The special for a certain day, escalloped noodles with eggs and salmon, ran 32 per cent of the total sales. The orders were for 51 pans of 31 servings each for the special which called for 12 bushels of cut celery for chop suey and 500 pounds of cut rhubarb for the coming day's rhubarb pie special (230 pies). By late afternoon only a part of next day's order had been prepared. The student's comment was, "Practically everyone but the order cook on the range was cutting up something." This story illustrates the effect of the coming day's menu on today's preparation and shows how the popularity or total sales of an item will affect production schedules.

The maximally effective use of expensive heavy duty equipment and utensils is contingent upon the menu and materially affects overhead costs. When several popular menu items are planned for the same meal, all of which must be prepared, let us say, in the ovens of the ranges, their popularity, unless one item kills the sales of another, may mean that few if any items are prepared on the top of the stove. Thus there is less effective use of the ranges and an increase in fuel cost which could have been offset if the menu items had necessitated an equalized use of tops and ovens. Or employee friction may result between the chef and the baker unless the sequence of production for the items each must make has been carefully worked out so that both will not need to use perhaps the one and only heavy duty electric mixer at the same time.

Standardized recipes which state the size and cost per portion may also specify the use of a definite size and type of dish for the final stage of preparation. Thus a menu having several popular items for the same meal, each of which calls for the use of the same type of individual oval baker—for example, the three dishes might be macaroni and cheese, escalloped fish, and pot roast of beef and brown gravy—may create a preparation problem. The total orders, based upon anticipated sales of the three items, may also call for more oval bakers than are available. The menu planner, therefore, must anticipate this problem and order the necessary extra bakers from the store-room, or substitute another perhaps equally popular and similarly priced item. The substituted item also might preferably require top of the stove preparation.

An efficient use of service facilities, such as the steam table, is equally important in expediting work and keeping overhead costs at a minimum. A given meal, for instance, may call for more sauces or gravies to be kept at the required hot or cold temperature than the facilities of the steam table or serving unit permit. The quality of food thereby suffers, accident hazards to the servers are increased since pots or pans

to hold the food must be placed on top of the units, and service is slowed up because the concentration of sauces and gravies in one service center entails extra motions in serving.

The menu as planned should also ensure efficient use of dishes, glass and silver. If the stock of any of these is inadequate so that they must be washed and returned to circulation before food service can proceed or before a next course can be served, then cold food may have to be served on hot dishes or service may be delayed. In this connection, another graduate wrote, "Tea for 600 people when you have only about 300 plates and less than 200 spoons is a grand administrative problem."

Cleaning costs and the costs of heavy duty equipment and physical plant maintenance are increased if production or service areas are congested or equipment in such constant use that proper servicing cannot be scheduled. Another point of control is shown in recent articles in restaurant and hotel publications describing the major layout changes and scheduling of use of heavy duty equipment to meet trends in public eating habits and offset rising raw food, payroll and maintenance costs.

THE UP-TO-DATE MENU

Finally, menus should be modern in every detail. Most menus undergo the "stale" period during the January, February and March slump. Managers at this time seem to have lost a zest for living and menus show a paucity of new ideas and lack the fresh vitality with which to tempt the jaded appetite. Crisp, fresh touches in terminology, combinations, garnishes, and new dishes, together with ingenuity in the items planned and the methods of service, will result in menus that attract guests. The manager needs to be just a little ahead in her knowledge of food styles and trends in food habits. For both the menu and the service should be as up to date as the new season's clothes.

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THE ESTIMATION OF THE ASCORBIC ACID CONTENT OF THE DIET[1]

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IN THE course of an investigation which sought to define more closely the relationship between the level of the plasma ascorbic acid and the previous diet, we were faced with the problem of estimating the dietary intake of the vitamin for the weeks that just preceded the blood determinations. We wished to obtain reasonably accurate estimates which could be related quantitatively to the plasma level. The problem required that the diet studied be that followed by the subject at home and in accordance with his eating habits at the time the correlation was made. This procedure differed from the well-known technic of balance studies, in which the actual intake of a substance is determined by analysis during a hospital stay. The plan necessitated that the subjects be trained to keep accurate records of the foods consumed at home, and that their records be translated into terms of average intake of ascorbic acid.

Accordingly, the subjects were instructed to keep careful records for an observation period usually of two weeks, during which the brands of canned foods used, the methods of preparation and cooking, and the recipes of mixed dishes were noted. At the end of the observation period we carefully checked the record with the subjects and questioned all doubtful points. In our earlier work, the subjects measured their food portions with a standard cup and other devices. Since a critical study convinced us that there might be considerable errors in estimating the probable weights of the portions from such a record, we decided to provide our subjects with a spring balance and have them weigh their foods. Not only is the interpretation of the record more accurate when the portions are weighed, but, contrary to our first expectations, our subjects actually cooperated better with the balance than the measuring cup. To them, the balance seemed to symbolize the importance of the study and the need for accuracy. In view of this, and the greater accuracy of the weighed diet record, we do not hesitate to recommend that others follow this technic.

The next and more difficult step was to estimate the intake of ascorbic acid from the diet record supplied by the subject. Since we wished to assess the actual amount of ascorbic acid afforded

[1] Read before the Dietetic Section of the Tri-State Hospital Assembly, Chicago, May 3, 1940. Acknowledgement is due Dr. James R. Blayney of the Walter G. Zoller Memorial Dental Clinic for the opportunity to study a number of these subjects.

by the subject's diet *as eaten*, the numerous reports and compilations in the literature were often of but limited value. Too frequently figures were lacking for cooked or canned foods. Published figures concerning the loss of ascorbic acid in various foods during storage, and from cooking by "standard" or ideal methods were difficult to apply in our estimations. Our subjects purchased their foods at retail markets under conditions which made the loss due to storage difficult to estimate. They used home methods of preparing and cooking their foods, frequently individual methods. Finally, their food stood on the table an appreciable length of time after being served, and they frequently ate foods which had been kept overnight in the refrigerator and reheated. It was apparent that we had to construct our own table of food values taking these matters into consideration.

In table 1 we present the values for the ascorbic acid content of the more important foods as used in this study. Although we feel that our paper would not be complete without this table, the values it contains will only be of assistance to other investigators if they constantly bear in mind the data and procedures on which they are based, as follows:

1. A careful study was made of those papers and compilations in the literature which report values for the ascorbic acid content of foods. Particular attention was paid to the analytical methods used, especially the use of metaphosphoric acid as an aid in preventing the oxidation of ascorbic acid during the course of the analysis.

2. The values in table 1 are based on these figures from the literature, but are heavily weighted to favor our own analytic results obtained by methods outlined below. In all, we have determined the ascorbic acid content of over 500 samples of food, paying particular attention to such foods as potatoes and oranges which are often important sources of the vitamin in the average diet. In the case of a number of foods, the literature yielded little information of the sort we needed. This was true of canned apricots, Lima beans, and pimiento; cooked wax beans, broccoli, green peppers, rutabaga, Hubbard squash, raw celery and cabbage.

3. It is important to note that the foods analyzed were obtained from November to March. Analyses done in July have yielded somewhat different results, especially in the case of potatoes where a higher value would be indicated for the summer months. Because of the purchasing habits of our outpatient subjects, as well as the season of the year, numerous analyses were made of canned foods obtained largely from outlets patronized by our subjects and of grades favored by them. A number of samples of frozen foods were also included.

4. In all cases, before an aliquot was taken for analysis, the food was prepared for consumption, served on a plate, and allowed to stand 5–15 minutes. That the loss of ascorbic acid following serving may be considerable is shown by an experiment on a baked Idaho potato. The skin of the hot potato was opened with the usual cruciate incision and aliquots were taken immediately and at 15-minute intervals. The values obtained were, successively, 9.6, 4.7, 4.2, and 3.1 mg. per cent. The methods of preparation and cooking of raw, cooked, canned and frozen foods

TABLE 1

The ascorbic acid content of foods as served (November to March)

	METHOD OF PREPARATION				NUMBER OF ANALYSES
	Raw	Cooked	Canned	Kept overnight and reheated	
	mg. %	*mg.* %	*mg.* %	*mg.* %	
Apples	2–8	0–3			32
Apricots			1–7		7
Asparagus, green			12–22		8
Avocado	4–10				4
Banana	5–11				8
Bean sprouts			1		2
Beans, green Lima		5 (F)	5		2
Beans, green string		0–6 (F)	0–6		7
Beans, wax			0–6		6
Beef liver		10*			
Beets		1–3			2
Blackberries	3–9*		3–9		4
Blueberries	4–10*				
Broccoli		17–35 (F)		4	4
Brussels sprouts		30–48		17–27	7
Cabbage	20–44	7–26		1	8
Cantaloupe	7–37*				
Carrot	3–8*	0–5			8
Cauliflower		12–40		8	3
Celery	1–6	1–4			3
Chard, Swiss		12–25*			
Cherries, red	8–10*	2–4			2
Cherries, Royal Anne			2		2
Corn, sweet		3–10*	3–10		8
Cranberries		2–4			2
Cucumber	2–8				7
Fruit cup (pears, peaches, pineapple)			2–3		4
Grapefruit or juice	25–45		25–45		16
Grapes	1–4				3
Lemons	10–45*				
Lettuce, head	2–5				2
Milk, pasteurized		0.3–1			7
Onions	6–10	3–6		1	5
Orange or juice	30–60		30–60		39
Parsnips		6–10		3	4
Peaches	2–15*		2–5		9
Pear	1–3*		1–3		4
Peas			2–6		7
Pepper, green	90–124	90–124			7
Pimiento			84–114		3
Pineapple or juice	25*		6–18		7
Plums	2–11*		1–3		2
Potato		1–10			38
Potato, sweet		10–25			9

(F) Indicates that part of the analyses were of frozen foods.

* An asterisk indicates that the range was obtained from the literature alone and was not checked by analysis, usually because the foods were out of season.

TABLE 1—*Concluded*

	METHOD OF PREPARATION				NUMBER OF ANALYSES
	Raw	Cooked	Canned	Kept overnight and reheated	
	mg. %	*mg.* %	*mg.* %	*mg.* %	
Radish	12–25				1
Raspberries, red	15–25*				
Rhubarb		2–3			3
Rutabaga		6–13		1–5	6
Sauerkraut or juice			9–31		3
Spinach		10–30	10–30	2–10	26
Squash, Hubbard		1–10		1–4	15
Strawberries	25–52*		16–20		5
Tangerines	20–30				4
Tomatoes	11–28		11–22		5
Tomato juice			8–26		3
Turnips		8–18		4–8	9
Watermelon	2–10*				

before analysis were similar to those used in the homes of our subjects. In addition, many vegetables were also cooked by currently approved methods and the results so obtained were considered in the final selection of values for table 1. Since our subjects often ate warmed-over foods, we made a practice of putting most canned and cooked foods in the refrigerator overnight, warming them the next day (if to be eaten warm) serving them on a plate, and repeating the analysis. In some cases, for example, that of grapefruit juice, there was no loss due to standing overnight in the refrigerator. In other instances the loss was considerable, and this is indicated in the table by the use of a separate figure for the warmed-over food.

The ascorbic acid content of mixed foods was estimated by taking into consideration the values for the various food constitutents indicated in the recipe and dividing by the number of servings. In our study, as indicated below, a comparison of the ascorbic acid contents of five diets as estimated and determined by analysis, showed that this procedure of "breaking down" a recipe was reasonably satisfactory. We urge, however, that other investigators follow our practice of checking doubtful estimates of recipes and canned, mixed food by analyses.

5. Aliquots of food for analysis were dropped into a tared bottle containing the metaphosphoric acid-sulfuric acid extraction solution of Mack and Tressler (1). This mixture prevents further loss of ascorbic acid. The analysis was completed by grinding and extracting the food, and titrating the extract with 2,6,dichlorophenolindophenol. As is well known, the indophenol method may overestimate the ascorbic acid content of a food due to non-specific reducing substances, or may underestimate the antiscorbutic value of a food due to the presence of dehydroascorbic acid which does not reduce the dye. We believe that such methodical errors are too small to influence greatly the accuracy of our estimates. This is especially true since

our estimates had to take into consideration variations from sample to sample in a given food, and variations in the effect of storage, preparation and cooking on the ascorbic content of the food. We have not used hydrogen sulfide to reduce reversibly oxidized ascorbic acid because of the known objections with regard to lack of specificity of its effect and difficulty in removing the last traces of the gas. We paid particular attention to the figures for the vitamin C content of foods determined by biological methods as compiled by Daniel and Munsell (2), and with the sole exception of cooked broccoli, these figures agree well with the values accepted for table 1.

6. It will be noted that in table 1 a range of values is usually stated. We believe that this is advisable because of the natural variation which occurs in the ascorbic acid content of different samples of food, and even in aliquots taken from different parts of the same sample. For instance, our analyses indicated that the ascorbic acid content of baked Hubbard squash showed a range of 1–10 mg. per cent. As more analyses were necessary, we took aliquots from four different squashes, all baked the same day and in the same oven for periods varying from 50 to 60 minutes. The values obtained were 11.7, 11.4, 4.0 and 0.9 mg. per cent and were largely independent of the duration of the cooking. Whenever a single range is given for a food prepared in a number of different ways, as 10–30 mg. per cent for spinach either cooked or canned or 1–10 mg. per cent for cooked potato, it is because we have no evidence that our estimate of the ascorbic acid content of the diet could be improved by using a separate range for each method of preparation and cooking.

7. Finally, while the values in table 1 are adapted to this particular study, they may be less useful to investigators working in other regions and at other seasons of the year. To attain greater validity as an expression of the ascorbic acid content of prepared American foods, table 1 should be based on many more analyses, on wider sampling throughout the year, and should include foods from all parts of the country. Since the method of analysis using indophenol titration is simple, we strongly urge that investigators settle in the laboratory their questions concerning the ascorbic acid content of various foods and food preparations.

TABLE 2

Comparison of the estimated and determined average daily intake of ascorbic acid

DIET	NUMBER OF DAYS	AVERAGE DAILY INTAKE OF ASCORBIC ACID		
		Determined	Estimated	
			Range	Average
		mg.	*mg.*	*mg.*
Hospital regular diet	7	55	34–84	59
Diet record A	7	53	35–91	63
Diet record B	14	43	32–65	49
Diet record C	14	30	20–47	34
Diet record D	13	16	7–26	17

We believe that the food values reported in table 1 form a fairly accurate basis for our estimation of the intake of ascorbic acid from weighed diet records. Table 2 presents a study of the reliability of such estimates. Four of the diets in table 2 were prepared in a way designed to imitate as closely as possible the conditions prevailing in the homes of the individuals who supplied the records.

That is to say, the brands of foods, recipes, and methods of cooking and preparation were those specified by the record and verified by careful questioning of the subject. A's diet, taken from his previous home record, was actually served to him during a later hospital stay and he was asked to comment on our ability to rival his mother's cooking. The hospital regular diet was served on one of the floors of the University Clinics at the same time and in the same manner as were the trays of the patients receiving this regimen. The food, prepared chiefly in the main kitchen, reached the floor in electric food conveyors. After serving, the portions were weighed and aliquots were taken for analysis. In a similar manner, the foods of the other four diets were all prepared for the table, served on a plate, and weighed, before the analysis was begun.

TABLE 3

Comparison of subject C's estimated and determined daily intake of ascorbic acid

DATE	DAILY ASCORBIC ACID INTAKE		
	Determined	Estimated	
		Range	Average
	mg.	mg.	mg.
11/16/39	18	7–33	20
11/17	51	33–63	48
11/18	27	24–57	41
11/19	19	10–28	19
11/20	30	19–44	32
11/21	19	9–24	17
11/22	3	2–6	4
11/23	33	36–73	55
11/24	16	12–28	20
11/25	96	57–116	87
11/26	14	5–20	13
11/27	20	11–40	26
11/28	6	4–16	10
11/29	73	51–105	78
Averages.....	30	20–47	34

It will be noted that in table 2, the average daily intake as determined by analysis always falls well within the estimated range, and shows, we believe, a reasonable agreement with the average of the range. The hospital diet, because of its wider variety, affords a more rigorous test of our methods of estimation than do the other, simpler diets. In table 3 we present a comparison by days of C's intake of ascorbic acid as estimated and as determined by analysis. Here again we consider the agreement to be reasonably satisfactory. On only one day did the value determined in the laboratory fall outside the estimated range in the five dietaries studied. With this one exception, the daily comparison of C's estimated and determined intake is quite typical of the results obtained with the other four diets.

It would take us too far afield to review critically the literature dealing with attempts to evaluate the ascorbic acid intake by studying the diet. Many of the methods used have certain inherent disadvantages. Estimates based on an inventory of the purchases of the family are difficult to translate into terms of intake for a given member of the family, and fail to consider the loss of ascorbic acid resulting from storage and preparation of the food. We do not believe that a preliminary diet history can be made to yield information sufficiently accurate for our purpose. The practice of scoring a diet by means of a number of plus or minus signs, or as "good", "adequate," and "poor" gives data difficult to treat quantitatively, and unwarrantedly implies that the requirement for ascorbic acid is known. A

somewhat more valid figure can be obtained by assessing a diet record in terms of the ascorbic acid content of raw foods, but this procedure still falls short of our goal, the individual subject's *actual* intake of ascorbic acid.

We believe that the best solution of the problem is that presented in this paper, namely: training the subject to keep an accurate, weighed diet record; and evaluating the record by means of a table of values, expressed as ranges, and constructed from analyses of like foods, prepared for consumption in a similar way, and obtained during the same season of the year.

SUMMARY

1. The intake of ascorbic acid may be estimated with a reasonable degree of accuracy from a weighed diet record.

2. Such an estimation depends on the use of a table giving the ascorbic acid content of like foods, prepared by methods similar to those used in preparing the diet to be estimated, and obtained during the same season of the year.

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Storage of Frozen Foods in the Institution

During recent years the development of methods for the rapid reduction of the internal temperatures of food materials to very low levels has resulted in a phenomenal growth of the frozen food industry, and hospitals are taking advantage of the wide choice of high grade frozen foods readily available throughout the year. From the standpoint of hospital planning this innovation is of interest since adequate special cold storage facilities must be made available. To assure good quality, freshness, sanitary care and the maintenance of the highest possible nutritive value, frozen foods must be subjected to low temperature as speedily as possible and held at zero Fahrenheit or 17.8 Centigrade or lower while in storage, in an airtight, waterproof package until the time of using. Thus, if any quantity of these supplies are kept in the hospital, special cabinets are required. Refrigeration may be by mechanical units built into the case which can be plugged into the regular lighting circuits, or if larger cases are required, the refrigeration equipment may be more distantly located. Cases are also available designed to use solidified carbon dioxide, with the necessary control of the evaporating carbon dioxide to insure an even temperature. In those hospitals manufacturing ice cream we advise the location of the ice cream freezing cabinets in an integral part of the frozen food cases.—*Walsh, W. H., Modern trends in hospital planning and equipment, Hospitals, August, 1940.*

THE UTILIZATION OF THE CALCIUM AND PHOSPHORUS OF TARO BY YOUNG WOMEN[1]

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SINCE many present-day human dietaries the world over have been found to be deficient in calcium, it behooves nutritionists to find additional dietary sources of this important mineral.

Taro (*Colocasia esculenta*) is a starchy vegetable common in many tropical and subtropical regions of the world today (5). It is richer in calcium, as a rule, than other common foods high in starch, namely, grain products and potatoes. The biological availability of the calcium of taro has been tested on growing rats. The calcium of this vegetable was found to be 90 per cent as well utilized as that of $Ca(H_2PO_4)_2 \cdot H_2O$ (6).

The aim in the present study was to determine the relative availability of the calcium and the phosphorus of taro in the human digestive tract.

Balance studies were conducted, with two healthy women as subjects, using a diet in which a large part of the calories, calcium, and phosphorus was supplied by taro. Other foods in the diet were selected to contribute a minimum of calcium and phosphorus, but the diet was adequate in calories, protein, essential minerals, and vitamins.

In addition it was considered of interest to compare the availability of the calcium and phosphorus of taro with the availability of these minerals in a diet high in white rice. The people of Japanese ancestry in the Territory of Hawaii, constituting about one-third of the total population, have retained many of the dietary customs prevalent in Japan. Their diet contains a large proportion of polished rice and variable quantities of meat, fish, vegetables, and white bread, but includes little or no milk. Following the balance experiment on the diet high in taro, an experiment was carried out with the same two subjects on a diet high in polished rice—a diet comparable, in its rice and calcium content, to that of many Oriental people in the Territory at the present time.

Two healthy mature women served as subjects. Subject A, a Caucasian, was born in the mainland United States of German parents born in northwest Germany. Subject B, a Japanese, was born in Hawaii of Japanese parents born in central Japan. The dietary histories of the two subjects are as follows: Subject A since infancy had lived on a diet of grains (milled and unmilled), vegetables, fruits, meat, and milk; subject B, on a diet of white rice, vegetables, fruits, and meat, with very little milk since approximately 3 years of age.

Subject A had 2 upper third molars missing and 9 filled cavities; subject B had 2 first molars missing and 4 filled cavities. Neither subject had active caries or unfilled cavities. Subject A was 173 cm. in height and weighed 63

[1] The work reported herein was conducted jointly by the University of Hawaii and the U. S. Department of Agriculture at the Hawaii Agricultural Experiment Station. Published with the approval of the Chief, Office of Experiment Stations, U. S. Department of Agriculture, and the Director, Hawaii Agricultural Experiment Station, as Technical Paper No. 63.

[2] With the technical assistance of Toyo Takase, assistant in nutrition.

kg.; subject B was 160 cm. in height and weighed 41 kg.

The daily activity of the subjects was uniform throughout the experiment.

Experimental Diets. The two diets (*see* table 1) were identical with the exception of the main source of starch—taro in one, white rice[3] and a small amount of white bread in the other. Throughout each balance experiment the daily food intake, preparation of the food, distribution of food among the three meals, and meal hours were uniform. Distilled water was taken as desired and the daily intake recorded.

The diets were planned to furnish each subject a little less than the average minimum requirement of 6.4 mg. calcium and 12.6 mg. phosphorus per kilogram of body weight, equivalent to 0.45 gm. calcium and 0.88 gm. phosphorus for a 70 kg. man (7, 8). Analysis of the composite diets showed that in comparison with the above requirements, the taro diet furnished about 4 per cent more than the requirement for calcium and about 40 per cent more than the requirement for phosphorus; the rice diet furnished only about 30 per cent of the requirement for calcium and a little more than the requirement for phosphorus.

In the taro diet about 50 per cent of the calories, 80 per cent of the calcium, and 40 per cent of the phosphorus were supplied by taro. The taro was eaten in the common Hawaiian form called *poi*, a thin, smooth paste made from cooked corms, which are ground, mixed with water, and strained through a coarse cloth to remove fibers. The poi was made from a common variety of wetland taro (*Piko Uliuli*) and was uniform throughout the experiment in source, preparation, and consistency (82.5 per cent water).

In the second balance study the intake of rice was as great as the subjects could consume in order that the maximum amount of both calcium and phosphorus might be derived from this food. About 50 per cent of the calories, 30 per cent of the calcium, and 35 per cent of the phosphorus were supplied by polished rice and milk-free white bread.

Throughout the experiment each subject took one haliver oil capsule per day (170 I. U. vitamin D) in order that mineral utilization would not be hindered by a shortage of this vitamin. It is certain that in the early Hawaiians, with their scant clothing, outdoor life, and abundant sunshine, there was no interference with mineral absorption due to shortage of vitamin D.

Experimental Periods. The taro diet (table 1) was eaten by the two subjects for 18 consecutive days during the last 12 of which food samples and all excreta were collected. The feces were separated into four 3-day periods by means of the usual markers. The taro diet was continued until all the feces for the last period had been excreted.

Following the completion of the first balance study, the taro in the diet was gradually replaced by polished rice and white bread and, after a preliminary period of 4 days, the rice diet (table 1) was continued for 6 days, during which time food samples and excreta were collected. The feces were separated into two 3-day periods. The experimental diet was again continued until all the feces for the last period had been excreted.

[3] A high grade of a Japanese variety of rice grown in California (Extra Fancy California Japanese Seed Rice) much used by the Japanese and other peoples in Hawaii.

TABLE 1

Food intake on the two diets, expressed in grams per day

	SUBJECT A (CAUCASIAN)		SUBJECT B (JAPANESE)	
	Taro diet	Rice diet	Taro diet	Rice diet
Apples, raw	50	50	50	50
Apricots, canned	250	250	200	200
Bacon, raw weight	50	50	50	50
Pepper, green, raw	30	30	30	30
Pohas*, canned	150	150	125	125
Pork, lean, ground, raw weight	200	200	200	200
Average weight after frying	125	125	125	125
Shoyu**	2	2	2	2
Sugar, pure granulated	50	50	50	50
Tomato juice, canned	100	100	100	100
Sodium chloride, C. P.	5	5	5	5
Haliver oil (1 capsule)	0.3	0.3	0.3	0.3
Taro, in form of poi (17.5% total solids)	2000		1200	
Rice, polished, raw weight		450		270
Average weight after cooking		1104		623
Bread, white, made with water		30		30
Distilled water (*ad lib.*) av. daily intake	506	1199	377	580

* *Physalis peruviana*, a common local fruit, a species related to the ground cherry (*Physalis pubescent*)—81.7% water, 1.9% protein, 0.1% ether extract, 3.2% crude fiber, 12.2% carbohydrate, 0.87% ash, 0.008% calcium, 0.059% phosphorus, 0.00093% iron; rich in vitamins A and C (3).

** Soy bean sauce—67.7% water, 7.80% protein, 5.00% carbohydrate, 16.73% total ash, 14.50% sodium chloride, 0.067% calcium, 0.187% phosphorus, 0.00279% iron (2) and unpublished data of this laboratory.

TABLE 2

Relative nutritive values of the two diets

	SUBJECT A (CAUCASIAN)		SUBJECT B (JAPANESE)	
	Taro diet	Rice diet	Taro diet	Rice diet
Total calories per day, calculated	2510	2883	1935	2190
Per cent calories from taro or cereals	53	59	41	48
Total protein, gm. per day, calculated	50.9	77.6	44.3	63.0
Total iron, gm. per day, calculated	0.026	0.013	0.018	0.011
Total calcium, gm. per day, by analysis	0.416	0.108	0.272	0.091
Total calcium from taro or cereals, gm. per day, by analysis	0.346	0.036	0.208	0.025
Per cent calcium from taro or cereals	83	33	76	27
Calcium intake per kg. body weight, gm. per day	0.0066	0.0017	0.0067	0.0022
Total phosphorus, gm. per day, by analysis	1.006	0.811	0.767	0.640
Total phosphorus from taro or cereals, gm. per day, by analysis	0.492	0.313	0.295	0.198
Per cent phosphorus from taro or cereals	49	39	38	31
Phosphorus intake per kg. body wt., gm. per day	0.0160	0.0129	0.0189	0.0156
Calcium: phosphorus ratio of the diets	1:2.4	1:7.5	1:2.8	1:7.0

For both subjects on both diets the collections were made during the intermenstrual period.

Analysis of the Diets and Excreta. Pooled food samples were analyzed for calcium and phosphorus by methods used in the previous study (6). Samples of the poi, rice, and bread were analyzed for calcium and phosphorus in like manner. The rice used in the diets and for analysis was weighed, then washed in tap water until the final wash water was clear (5 washings)—the usual Japanese way of washing rice before cooking—which may account for the low mineral content of this rice (0.0061 per cent calcium and 0.0637 per cent phosphorus) as compared with values given in the literature. The calcium and phosphorus contents of the diets and the foods studied are given in table 2.

The specific gravity, *p*H (by Leeds and Northrup potentiometer with quinhydrone electrode), and total titratable acidity by the method of Folin (4) were determined daily on the 24-hour urine collections. Indican was determined on the fresh urine by Obermayer's method (1) near the end of each balance study.[4]

Aliquots of the 24-hour urine collections and of the 3-day feces collections were analyzed for calcium and phosphorus by the methods referred to above. Tables 3 and 4 contain the data on collection and analysis of urine and of feces.

TABLE 3

Data on urine collection and analysis for the 2 balance experiments

SUBJECT	DIET	AV. 24-HR. VOL.	AV. *p*H (ELECTROMETRIC)	AV. DAILY TITRATABLE ACIDITY	AV. DAILY URINARY CALCIUM	AV. DAILY URINARY PHOSPHORUS
		cc.		*cc. normal NaOH*	*gm.*	*gm.*
A	Taro	2008	7.428	80.9	0.059	0.528
(Caucasian)	Rice	1570	6.644	145.2	0.112	0.493
B	Taro	1488	7.119	77.5	0.018	0.409
(Japanese)	Rice	1033	6.033	178.9	0.043	0.453

TABLE 4

Data on feces collection and analysis for the 2 balance experiments

SUBJECT	DIET	AV. DAILY FECAL WEIGHT		AV. DIGESTION TIME	AV. DAILY FECAL MINERAL EXCRETION	
		Wet	Dry		Calcium	Phosphorus
		gm.	*gm.*	*hr.*	*gm.*	*gm.*
A	Taro	168.0	37.1	19	0.365	0.413
(Caucasian)	Rice	89.2	23.1	22	0.129	0.258
B	Taro	150.8	28.7	30	0.230	0.259
(Japanese)	Rice	110.3	19.5	23	0.053	0.172

[4] In both subjects on each of the two diets the amount of indican in the 24-hour urine was well within the normal range (1) but in both subjects it was significantly higher on the high-rice diet than on the high-taro diet. On the latter diet there was but a barely perceptible trace of indican in the urine of both subjects.

TABLE 5

*Average daily calcium and phosphorus balances**

DIET	SUBJECT	PERIOD*	CALCIUM INTAKE		URINARY CALCIUM	FECAL CALCIUM	TOTAL CALCIUM EXCRETED	CALCIUM BALANCE	PHOSPHORUS INTAKE		URINARY PHOSPHORUS	FECAL PHOSPHORUS	TOTAL PHOSPHORUS EXCRETED	PHOSPHORUS BALANCE
			Total	Per kg.					Total	Per kg.				
			gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.	gm.
Taro	A	I	0.416	0.0066	0.068	0.438	0.506	−0.090	1.006	0.0160	0.557	0.472	1.029	−0.023
		II	0.416	0.0066	0.067	0.434	0.501	−0.085	1.006	0.0160	0.468	0.452	0.920	+0.086
		Av. first 2 periods	0.416	0.0066	0.068	0.436	0.504	−0.088	1.006	0.0160	0.512	0.462	0.974	+0.032
		III	0.416	0.0066	0.059	0.273	0.332	+0.084	1.006	0.0160	0.533	0.311	0.844	+0.162
		IV	0.416	0.0066	0.042	0.314	0.356	+0.060	1.006	0.0160	0.553	0.416	0.969	+0.037
		Av. 4 periods	0.416	0.0066	0.059	0.365	0.424	−0.008	1.006	0.0160	0.528	0.413	0.941	+0.066
	B	I	0.272	0.0067	0.024	0.202	0.226	+0.046	0.767	0.0189	0.360	0.226	0.586	+0.181
		II	0.272	0.0067	0.022	0.275	0.297	−0.025	0.767	0.0189	0.357	0.300	0.657	+0.110
		Av. first 2 periods	0.272	0.0067	0.023	0.238	0.262	+0.010	0.767	0.0189	0.358	0.263	0.622	+0.146
		III	0.272	0.0067	0.013	0.166	0.179	+0.093	0.767	0.0189	0.469	0.199	0.668	+0.099
		IV	0.272	0.0067	0.012	0.275	0.287	−0.015	0.767	0.0189	0.451	0.309	0.760	+0.007
		Av. 4 periods	0.272	0.0067	0.018	0.230	0.247	+0.025	0.767	0.0189	0.409	0.259	0.668	+0.099
Rice	A	V	0.108	0.0017	0.122	0.171	0.293	−0.185	0.811	0.0129	0.413	0.289	0.702	+0.109
		VI	0.108	0.0017	0.102	0.086	0.188	−0.800	0.811	0.0129	0.573	0.226	0.799	+0.012
		Av.	0.108	0.0017	0.112	0.129	0.241	−0.133	0.811	0.0129	0.493	0.258	0.751	+0.060
	B	V	0.091	0.0022	0.049	0.053	0.102	−0.011	0.640	0.0156	0.460	0.149	0.609	+0.031
		VI	0.091	0.0022	0.036	0.053	0.089	+0.002	0.640	0.0156	0.445	0.194	0.639	+0.001
		Av.	0.091	0.0022	0.043	0.053	0.096	−0.005	0.640	0.0156	0.453	0.172	0.624	+0.016

* Each period includes 3 days, but the mineral intake and output are here given in terms of the average daily values for each period.

DISCUSSION

Table 5 contains the data on calcium and phosphorus balances for the two subjects on the two diets. On the taro diet each subject had two positive and two negative calcium balances and each had a near-equilibrium average balance for the whole period on the taro diet, indicating that on this diet each subject was getting very nearly the minimum amount of the mineral necessary for equilibrium. Since the calcium intake of each subject on this diet was only about 4 per cent above the average minimum requirement for this mineral, it may be concluded that the calcium of taro is well utilized by adult women.

Although microscopic crystals of calcium oxalate have been found in taro corms, recent chemical analyses show that the amount of oxalate present is so small that it cannot be detected by methods satisfactory for determining 1 part in 5000 (5). This fact and the favorable results of the foregoing balance experiment indicate that the utilization of the calcium in this food is not influenced by its oxalate content.

Both subjects were in positive phosphorus balance while on the taro diet. The relative availability of the phosphorus in the taro diet is not conclusively shown by this experiment since the intake of this mineral was unavoidably in excess of the minimum requirement. But, since both subjects were in positive phosphorus balance and the intake was not greatly in excess of the minimum requirement, it seems that the phosphorus of taro is also relatively well utilized by adult women.

On the high-rice diet the Japanese subject was in calcium equilibrium with a very low calcium intake, namely, 0.091 gm. per day, or 0.0022 gm. per kilogram of body weight. This apparently low calcium requirement and the good utilization of the calcium present in the high-rice diet by the Japanese subject suggest the advisability of additional experiments with such a diet on a larger number of subjects to determine the minimum calcium requirement of peoples accustomed for generations to a diet low in calcium, and the relative utilization of the calcium of such a diet by Caucasians.[6] The Caucasian subject's need for calcium was not met by the high-rice diet. Her average daily loss of calcium while on this diet was 0.133 gm., but there was apparently some biological adjustment to the low calcium intake in the second 3-day period. Both subjects were in positive phosphorus balance while on the rice diet, which supplied not much more than the average minimum daily requirement for this mineral, indicating a good utilization of the phosphorus in this diet by both subjects.

SUMMARY

Calcium and phosphorus balances were determined on two healthy women (a Caucasian and a Japanese) on two diets, one high in taro and one high in white rice. Taro (in the form of poi) furnished about 80 per cent of the calcium and 40 per cent of the phosphorus in the first diet; rice furnished about 30 per cent of the calcium and 35 per cent of the phosphorus in the second diet.

[6] Since the preparation of this manuscript an article has appeared in the *Journal of Nutrition* for December 1939, reporting another case of positive calcium balance on an unusually low intake of this mineral.

It was concluded that the calcium and phosphorus of taro corms are well utilized by women.

On the rice diet, the Japanese subject was capable of maintaining calcium equilibrium on the low intake of 0.091 gm. per day (0.0022 gm. per kilogram), whereas the calcium balance of the Caucasian subject on the rice diet was −0.133 gm. per day. The need for additional calcium balance experiments on Oriental and Caucasian subjects seems indicated. The phosphorus in the high-rice diet was well utilized by both subjects.

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(8) Sherman, H. C.: Phosphorus requirement of maintenance in man, J. Biol. Chem., 41: 173, 1920.

Food Fads Are Foolish

Some of these faddists are strong for "elimination diets." They eliminate from the diet practically everything you should have. The matinee idol among these food quacks has sold thousands of women—and some of them very intelligent and charming women, too—on his particular elimination diet, a main feature of which is "potassium broth." So many different foods supply potassium that it is hard to understand why this element has been singled out.—*Kain, I. J., Prescription for Slimming, p. 165, David McKay Company, 1940.*

EDITORIAL

MARY I. BARBER, PRESIDENT OF THE AMERICAN DIETETIC ASSOCIATION

It is a high honor as well as a great responsibility to be President of the American Dietetic Association. This office now comes to one who richly deserves the honor and by reason of her known executive ability and high precepts, will meet the responsibility with assurance and competence.

Mary I. Barber is a member of that select group, the Home Economics Women in Business. She was among the first to enter this comparatively recent activity in the home economics field which now has widened and developed into one of the most purposeful activities open to home economics trained women. As director of the Home Economics Department of the Kellogg Company, Miss Barber has travelled in nearly all of these United States and the Dominion of Canada. She and her co-workers in the field have done more to perfect the standardized recipe and to raise the level of promotional work among industries catering to the food needs of the public, in the opinion of this editorial writer, than any other individuals or group.

As a hospital dietitian and later as teacher of foods and cookery at Teachers College and demonstration lecturer for the Federal Food Administration under Mayor John Puroy Mitchell in New York and for the New York Bureau of Conservation, Miss Barber gained an excellent background. In the field of cookery technic she inherits the skill of her lineal predecessors, Anna Barrows and Bertha Shapleigh. Her graduate work in biological chemistry served to expand her interest from that of a highly perfected culinary artistry to a more profound and far-reaching activity—the teaching of the principles of sound nutrition in the commercial field. Industry, in employing the home economist and dietitian, has not only led in perfecting the standardized recipe but has also been a strong factor in instilling an awareness of sound nutrition among the public.

Miss Barber has been honored many times by her professional organizations: as vice-president of the American Home Economics Association; as second vice-president, chairman of the Community Education Section and member of the Finance Committee of the American Dietetic Association; as president of the Michigan Home Economics Association and vice-president of the Michigan Dietetic Association. She is also an honorary member of the Women's Advertising Club of Grand Rapids, Michigan, a member of the Altrusa Club and the American Association of University Women.

Of Mary I. Barber, 1940–41 President of the American Dietetic Association, that truism can be said with firm conviction: "What trusty treasure in the world can countervail a friend?" Those who call her friend are many. For no one in the Association possesses to a greater degree the ability to be impersonal and fair in judgment, and generous in friendship. She has a warmth of spirit, a kindly attitude to all, and a happy buoyancy which heartens those who meet her. In this lies her strength. For in this day of obscure and tangled human relationships and viewpoints, the Association is fortunate indeed to have a leader so direct and unbiased, so coura-

geous and well-balanced. We welcome her as President of the American Dietetic Association. May we see at the end of her year's custodianship an even greater spirit of unselfish cooperation and service within our Association.

QUALITY AND QUANTITY OF PROTEIN FOR HUMAN NEEDS

Is an abundance of protein significant for health? Are maintenance requirements, now assessed at from 45–60 gm., sufficient for optimal conditions? Thus queries Cuthbertson[1] who then proceeds with the premise that the rate of supply of protein obviously conditions growth, maintenance, repair, reproduction and lactation. To subserve these processes is the primary function of protein. As a source of energy it probably serves no more usefully than carbohydrate or fat unless its simultaneous metabolism with these is advantageous or its specific dynamic action peculiarly suited for those exposed to cold.

In satisfying all the several phases of cellular activity, animal protein is superior to vegetable sources taken singly, and this superiority is more obvious in growth than in maintenance[2]. The amounts of the indispensable amino acids present condition these differences which are diminished theoretically by a process of supplementation when a variety of plant foods is freely selected[2, 3]. For example, if the protein requirement does not exceed that required for specific endogenous nitrogen expenditure, namely, 3 gm. per 70 kg. man per day, then only 18.75 gm. of protein with a biological value of 100 would be required; or, 22 gm. protein daily if supplied by rice with a biological value of 85. While this hypothesis is theoretically feasible, Cuthbertson points out that the method of determining specific endogenous nitrogen expenditure on a protein-free diet may not give "the true measure of the actual requirement on a mixed diet", since a protein-free diet may impose a special economy on the organism.

Further, since protein in actual foods is associated with other nutrients, to satisfy other needs, therefore, or in the optimal metabolism of other constituents, more protein than the theoretical requirement may be indicated. Thus, in practice, usually three or even ten times the endogenous minimum is habitually ingested in diets in which the protein of animal origin varies from 0–100 per cent of the total protein.

"The fruits of a colossal experience accumulated by countless millions of men throughout successive generations", racial prejudices, religious scruples, cults and taboos, condition many of our dietary customs and certain of our nutritional deficiencies. Along with these, "ignorance and apathy, fashion and conservatism, false rationalisations and propaganda play their rôle in preventing man from making the best use of what is accessible within his producing, purchasing or bartering power."

In general, world diets fall into three chief groups: (1) chiefly animal food, largely due to geographical necessity; (2) chiefly plant, because of pressure of

[1] Cuthbertson, D. P.: Quality and quantity of protein in relation to human health and disease, Nutrition Abstr. & Rev., 10: 1, 1940.

[2] Terroine, E. F.: Quart. Bull. Health Organis. L.o.N., 5: 427, 1936.

[3] Mitchell, H. H.: "Settimo Convegno 'Volta'." Reale Accademia d'Italia, Rome, Sept.-Oct., 1937.

population and primitive farming methods; and (3) mixed foods of plant and animal origin which constitute the great bulk of the diets of white people and of the more well-to-do Asiatics. As Cuthbertson says with regard to low protein diets: "In this realm of human dietetics personal views have been urged with much vehemence." The exponents of low protein have avowed the physiologic and economic unsoundness of a protein intake beyond that needed to match endogenous nitrogen expenditure. Many physiologists, on the other hand, have urged that existing habits must be preserved from such subversive doctrines, and have held with Rubner that a large protein allowance is the right of civilized man.

Despite these controversies, certain truths stand out. Man can adjust himself to varying levels of protein intake, and in a form either exclusively animal, vegetable, or of intermediate admixtures provided amino-acid supplementation is effective and total intake adequate. In general, and as permitted by economic circumstance, man elects an animal protein intake in the region of 60 per cent of the total protein. Whether this be determined by real need for protein of animal origin is problematical. Certainly, at least, attractive flavor and easy assimilation are contributing factors. Or it may be such protein forms more effectively an optimal metabolizable mixture with other elements in the diet. At any rate, the good physique, endurance and virility of those racial groups who subsist on diets relatively rich in animal protein, as compared with the general absence of these qualities where diets are low in, or devoid of animal protein, puts the whole picture rather in the light of a cause and effect relationship, especially when heredity and certain other factors are discounted.

ORGANIZATION AND AIMS OF THE AMERICAN DIETETIC ASSOCIATION[1]

There is strength in organization and obviously where there is an organization there must be elective officers whose duty it is to carry out the wishes of the membership. A double slate for such elective officers may mean that only a few more than half of the voters are satisfied with the people elected. With a single slate it is hard to reckon the percentage of approval and there are always some who feel that this type of election is undemocratic even though constitutional.

The reasons why the American Dietetic Association has adopted a single slate for the president-elect are forceful. A presidential candidate feels that she must have the approval of her hospital superintendent or immediate superior before accepting an invitation to the office of president, for the responsibility makes great demands on time, calling as it does for extensive office work and travelling. Such permission, therefore, is sometimes difficult to obtain and once obtained it would be decidedly embarrassing not to be elected. Another problem which has perplexed the Nominating Committee is the difficulty of getting someone to run against a strong candidate. Few wish to accept the doubtful honor of being defeated, even by a powerful opponent.

Perhaps if more were familiar with the

[1] Based on talks by Mary I. Barber as president-elect, before affiliated state associations, 1939–40.

Association's present system of selecting a president-elect, there would be less tendency to view this as an undemocratic procedure. The Nominating Committee is elected by vote of the whole Association, the chairman being the one who receives the most votes. This committee then proceeds to write to the members of the Executive Board, to past-presidents, state presidents, and key members for suggestions in making up the slate. Names as suggested are then presented for the consideration of the Nominating Committee. In weighing the suitability of a proposed candidate for any elective office, consideration is given to the following points:

(1) Are the candidates suggested definitely interested in the Association? Have they contributed in the past to its work?

(2) Do they have the ability to shoulder responsibility?

(3) Do they have executive ability? Do they cooperate?

(4) Does the final slate represent a wide geographic distribution of members. Sometimes it is desirable to have opposing candidates from the same part of the country. It has been found, too, that opposing candidates should be from the same field of work.

(5) Has the candidate for president-elect served on the Executive Board in some capacity in the past few years? This is highly desirable.

The president-elect, as affiliation chairman, meets with state associations, assists in organizing these, and helps to solve membership problems. By meeting with many associations the affiliation chairman becomes acquainted with the special abilities of members and keeps in touch with the progress of the state groups. This experience is invaluable to her when she takes over the office of president and makes her appointments.

During the past year the affiliation chairman noted that state groups feel the need for a continuity of viewpoint in inspection of approved courses and in membership policies. This it is believed will be furthered by the appointment of an educational director. More members need to be actively engaged in association affairs. This is being encouraged by the section chairmen who are planning projects to be worked out through the states rather than by individuals responsible directly to the section chairmen. These section activities should also be initiated earlier in the year.

There is need for more approved training courses in hospitals. Each state should encourage courses in hospitals and institutions which they know are adequately equipped to give such courses.

There is need for more exhibit material prepared by the states. Refresher courses, a sign of growth, are being offered and received with enthusiasm. Programs of state meetings are nicely balanced and give due importance to administration, diet therapy, professional education, community education and sociability. Publicity is improving. It is important to let the public know about your association so that people may know where to turn for special advice and help.

There are other matters of national and perhaps international importance. Each state should know which members are qualified and could be released for emergency service. When the present war is over there will be many oppor-

tunities for dietitians to help bring the malnourished people of the world back to health. Many of our members in the pre- and post-war days of 1917–20 aided in the Army, in food conservation, and in foreign relief. It was the last great war which was responsible for the birth of this Association. Much has happened in the Association since. In 1917 there were no approved courses, no student training. Graduates then went directly from college to hospitals to work long hours, often performing tasks that are now relegated to people with far less education. Today the Placement Bureau guides the right student to the right job and helps her to adjust and to progress.

Our field has broadened and as yet knows no horizons. This year we have had representation in several allied organizations: National Federation of Business and Professional Women's Clubs; Advisory Committee on Enrollment of Dietitians for the Army and Red Cross; Sears, Roebuck and Company Labeling Program; Conference of Food Service Directors; Children in a Democracy Conference; Women's Joint Congressional Committee, and National Defense Conference called by Harriet Elliott at Washington. The Association has had exhibits at hospital, medical and dental conventions.

Our organization must not become static. Too often people are inclined to accept things as they are. Are you satisfied with your association? Do you like the way the sections are set up or would you prefer the membership interests to be classified differently? Do you know of institutions which need competent dietitians? If so, what do you or your executive board do about it? Do you make suggestions for improvement openly, or do you mutter in your beard about things you don't like? Do you "sell" dietetics to your community, meet with groups other than your own, give information about nutrition to people who need it, and keep your professional association alive in the minds of others?

Each of the national elective and appointive officers aims to carry out the wishes of the membership which, acting through state associations, should make known its wishes. Only thus, through one and all working together, can the Association progress.

CURRENT COMMENT

A NUTRITION ADVISER IN INDUSTRY

LAURA COMSTOCK

The development of diet-consciousness in the Eastman Kodak Company parallels, to a large extent, the increased emphasis and interest in diet throughout the world during the past twenty years.

Because medical records indicated that a large share of minor illnesses of employees in this company was due to faulty diet, a nutrition adviser was added to the staff of the Medical Department in 1922. No definite program was outlined. The aim, of course, was to present fundamental nutrition facts with such simplicity, attractiveness, and force that the ideas would be accepted and put into practice.

For the first few years the work consisted almost exclusively of personal

consultations. The majority of employees seen were those referred by doctors, nurses or heads of departments because of underweight or overweight. It was not long, however, before individuals began to come voluntarily for advice about their own diet or for suggestions for some member of the family. Such personal consultations have continued to be the basis of all the educational work.

Obviously, it is impossible to see everyone individually in an organization of some 17,000 employees. In order to reach this larger group, exhibits, magazine articles and posters are prepared periodically.

Special groups have been organized to take extra nourishment such as milk, bananas, or cod liver oil. The first group taking cod liver oil in 1927 was made up of twenty-five girls and liquid cod liver oil was administered. Each year the number increased until in 1938 the group totalled 3079 men and women. When concentrates were available the use of liquid oil was abandoned, largely because of the ease of distribution.

The work of the visiting nurses often presents opportunities to give suggestions to a patient in his home regarding diet. Informal discussions are held with the nurses from time to time to bring their nutrition knowledge up to date. Another group of matrons and forewomen in the factory is in close touch with many employees. Questions on diet are frequently asked of them. A series of meetings has been arranged with this group to give them a clearer idea of the influence of diet on health. The main emphasis is placed on the advisability of the employee reporting to the Medical Department for advice and guidance, rather than depending on his own sources of information. The nutrition adviser also meets with groups of young employees soon after their employment so that they will realize the importance of diet and where to seek advice if they need it.

With the increasingly large amount of literature on the subject of nutrition, one important function of the nutrition adviser is the sifting of material so that the latest reliable information can be made available to the doctors and nurses. Whereas in 1922 there was a dearth of material, today the amount is overwhelming. A recent innovation consists of the monthly distribution to all doctors and nurses of a page of nutrition notes covering recent findings from laboratories and clinics. These notes have been helpful in discussing with employees the importance of right diet to health.

KITCHEN EQUIPMENT[1]

MARY M. HARRINGTON

The need of a guide in the selection of kitchen equipment has been demonstrated by the many requests for such information received by this committee last year. In this study, intended to show the trends in kitchen equipment in new or recently remodeled institutions, 30 hospitals, 12 dormitories and 4 lunchrooms are included. Floor plans of these institutions may be obtained from the Association's library.

The hospitals have been grouped on the basis of meals served since the bed

[1] Report of Subcommittee III, under the chairmanship of Mary M. Harrington, presented before the Administration Section, American Dietetic Association, New York, October 22, 1940.

capacity did not seem an accurate index of the total number of meals prepared for patients and employees. These institutions are serving from 200 to 5500 meals daily and offer sufficient range in size to be of interest to a number of dietitians.

The average floor space allotted ranged from .74 to 3.68 sq. ft. per meal served, with an average area of 1.80 sq. ft. per meal served, but 32 per cent used a larger floor space. Tile seemed to be the flooring most generally used (66 per cent) while terrazo was second in choice. Plaster was used for 40 per cent of the walls but 60 per cent used a combination of tile and plaster.

The fan type of ventilation seemed to be generally accepted. Brine refrigeration was used by 63 per cent of the hospitals and 37 per cent used an electric type of refrigeration.

Tables ranged in height from 26 to 40½ inches but 34, 35 and 36-inch heights were most popular. All kitchens had one wooden top table and other materials used were stainless steel, Monel, porcelain, Allegheny steel, and marble. There was no uniformity in widths and lengths.

Sinks varied in length and width and height in the same manner as the tables. Only 63 per cent of the kitchens had hand sinks.

Gas was the most popular fuel for ranges but 30 per cent used electricity and 7 per cent oil. The number of ranges varied from a ratio of 1 to each 95 meals served, to 1:1000. However, such a variation must be interpreted in relation to the number of bake ovens and broilers also used. Only 13 per cent of the institutions were without broiler attachments, but the ratio of broilers to meals served was lower than ranges and 70 per cent of the kitchens had separate ovens for baking.

Steamers were used by 83.3 per cent of the kitchens, generally the standard type with three shelves. Cast iron, aluminum and stainless steel were materials used, but only two institutions had selected stainless steel.

Fry kettles were operated with gas, primarily, and 60 per cent of the kitchens were equipped with these.

The variation in the number of mixers was marked and sizes ranged from 4 to 80 qt. Most hospitals included two mixers. Enamel or paint were the only types of finish.

Steam kettles varied from 6 to 100 gal. capacity and only 13 per cent of the institutions lacked this piece of equipment. One hospital serving 4800 meals installed 9 kettles with a total capacity of 190 gal. and a hospital serving 5500 meals had 6 with a total capacity of 300 gal.

Only 50 per cent of the kitchens had ice cream freezers and most of these were of the horizontal type with a 5 gal. capacity.

Vegetable choppers were used by 73 per cent and usually were of the standard pedestal type.

Potato parer machines were standard equipment in all but one institution. Only 40 per cent of these emptied into sinks.

Fifty per cent of the institutions had the conveyer type of dishwasher and very few used glass washers, one of which was the revolving arm and two the brush type.

Bain-maries were included in 67 per cent of the kitchens and most of these had warmer bases.

Food warmers and mop cabinets were not generally included in the kitchens studied.

Dormitories used a larger floor area in their kitchens (3.17 sq. ft. per meal served) and 33 per cent used linoleum and similar materials for floor covering. In general, the selection of equipment was similar to that of hospital kitchens except in the instances noted. Fewer ranges and broilers were installed but all of the kitchens had separate bake ovens. Steamers, mixers and steam kettles were included in most institutions but only a few installed fry kettles. It was interesting to note that none of these institutions had ice cream freezers and only 3 dormitories selected glass washers.

Only 4 school lunchrooms were studied and this number was insufficient to warrant any comparisons.

Dietitians interested in building or remodeling a kitchen can gain much helpful information by studying the completed summary of this report as filed in the office of the Association.

THE DIETITIAN IN THE NETHERLANDS

HENDERIKA J. RYNBERGEN

Two reprints from the Dutch journal *Voeding* (Nutrition) have been sent to us for review. The first article, written by Dr. J. Groen of Amsterdam, and based on information obtained while visiting in the United States, is a survey of the educational and professional activities of the dietitian in this country. The second article by Miss Diny J. ten Haaf, a dietitian in Amsterdam, is a short survey of the situation in the Netherlands.

Dr. Groen's article ably presents to the Dutch medical and lay public the educational background and training required in the United States of the young woman who wishes to prepare herself for the dietary field. He outlines in detail the courses given and the work required in the student period, and amply describes the work of the hospital dietitian, both administrative and therapeutic, the food clinic and public health nutritionist, the research worker, and the cafeteria, hotel, and dining room manager.

There is one error in the statement Dr. Groen makes in regard to the degree obtainable in the student courses. The reference is probably to the master's degree which he has translated as a doctor's degree. I do not believe the master's degree exists in the European universities, but it should be understood that it represents only a step toward the doctorate. We would also like to emphasize that the year's student course is an internship, during which time the student acquires much of her learning by participating actively in the work of the department of nutrition.

Miss ten Haaf tells us that a training course for dietitians was established in the Netherlands in 1935. The prerequisite for admission is a normal school diploma in home economics, probably equivalent to two years of our college work, which has prepared the student for teaching this subject. The training course given in Amsterdam consists of one day of classes a week from September to June, devoted to lectures and discussion in normal and therapeutic nutrition, medical and surgical diseases, and administration, bookkeeping and household economy. The student is

given considerable homework to do, particularly in the writing and calculation of diets, which is discussed when the class meets the following week. The classes are all given in one day to enable students to come to Amsterdam from other parts of the country. No mention is made of a hospital internship or other opportunity for practice, and if such provision does not exist, this would seem a real weakness in the course.

Miss ten Haaf lists some eight hospitals in the Netherlands which have dietary departments. The emphasis, as was originally the case in the United States, is on the preparation of therapeutic diets and little is said about the dietitian assuming the responsibility for the feeding of all patients and personnel. This phase of the dietitian's activities will undoubtedly develop in the Netherlands as it has in this country.

The article ends with the expressed need for an organization of hospital dietitians with a periodical of their own. We here in the United States extend to our Dutch colleagues our congratulations on their success in establishing a new profession, and offer the hope that, despite these troublous times, they may have continued opportunities for growth.

* * *

Children in a Democracy

IN THIS PERIOD when every resource of the Nation must be placed upon the strongest possible foundation, it is fortunate that the people of this country have been given a positive program of child welfare through the White House Conference on Children in a Democracy. The National Citizens Committee of this Conference at its first meeting, June 17, 1940, adopted a resolution calling upon every citizen and all organizations concerned with human welfare to do their share in helping our democracy serve the needs of every child and prepare children and youth for service to democracy. It is important now that follow-up programs be organized in every State. If they function well, they will affect the well-being of children in every community.

The American people are concerned that the care of our own children be fully adequate, and at the same time that the United States share in extending aid to the children of Europe who have suffered from the terrors of war. The United States Committee for the Care of European Children has urged that there be no slackening in the services for American children, both governmental and private, which must be maintained and expanded wherever they are inadequate. I am confident that we shall not fail our own children or the children of other lands whom it is our privilege to serve.—*Field, Marshall, Chairman, National Citizens Committee, Supplement to The Child, Children's Bureau, U. S. Department of Labor, July, 1940.*

BOOK REVIEWS

The Newer Nutrition in Pediatric Practice. By I. Newton Kugelmass, M.D., Sc.D. Philadelphia: J. B. Lippincott Company, 1940, pp. 1155. Price $10.

This is the most extensively detailed book available on the nutrition of the child in health and disease. It is divided into three sections: Nutritional Physiology; Nutrition in Health; and Nutrition in Disease. Each section is preceded by a concise introduction or orientation.

The author shows a happy facility in turning the apt phrase or definition. For instance, he defines nutritional physiology as "an organized mechanism for the transformation of food, air and sun into body materials and energy"; and the panorama of growth and development "may be likened to the ascent of a spiral stair from which the physician periodically surveys the same landscape from a higher level than the last." At least 50 chemical substances enter into the child's nutritional needs: 22 amino acids; 12 vitamin substances; 12 inorganic elements; water and oxygen. Under Maintenance and Metabolism, Dr. Kugelmass discusses his subject under subheads: energy metabolism, organic nutrients, vitamin, mineral, acid-base and water metabolism, and digestion and absorption. Excellent charts, graphs, tables and references supplement the section which covers more than 170 pages.

Under Nutrition in Health, the author states, "The caliber of the child's growth and development is determined by the adequacy of his nutrition under normal and pathologic conditions." He then discusses the child's nutrition from birth to 12 years in 160 pages of text.

Under Nutrition in Disease the author states, "Of all pediatric armamentaria at our command in diagnosis, treatment and prevention of disease, nutrition is paramount." He first presents symptom diagnoses of nutritional disorders in outline form, a helpful scheme for rapid reference. Then follows a discussion of digestive diseases, including the alimentary symptoms of these. Diets are included for spastic and atonic constipation, in protein, carbohydrate and fat intolerances, celiac disease, and cyclic vomiting and formulas for gavage and rectal administration. More than 130 pages are devoted to deficiency diseases, covering etiology, symptomatology, the clinical picture, therapy, and sample diets at various age levels. Numerous photographs will assist in diagnoses.

Under Metabolic Diseases an unusual amount of space is given to dietary calculations for the ketogenic diet. Then follow Allergic Diseases, Infectious Diseases, and finally, Regional Diseases. Ample references from the domestic and foreign literature and an adequate index complete what may be correctly termed a monumental work, one which the dietitian will find an excellent reference in teaching and practice.

Nutrition and the War. By Geoffrey Bourne, D.Sc., Beit Memorial Research Fellow. London: Cambridge University Press. New York: The Macmillan Company, 1940, pp. 126. Price $1.

This book is based on a series of articles on nutrition published by the author in 1938–39. The compilation of these under one cover is with the object of helping the layman to understand his nutritional needs so that in time of war he may choose alternative foods when certain items are difficult or impossible to obtain. For instance, List A gives the percentage composition in protein, carbohydrate and fat, and the mineral and vitamin status of the individual foods; List B groups the common foods as "best sources of the various food elements" approximately in the order of value. As the author states: "If you are unable to obtain any particular food, look it up in list A, see what it contains, then look up those things in list B and see what other foods will give them to you."

The application of the principles of nutrition thus presented by Dr. Bourne should counteract much of that tragic aftermath of war, nutritional deficiencies, as they affect both children and adults.

Practical Dietetics with Reference to Diet in Health and Disease. By Alida Frances Pattee. Twenty-second edition. Mount Vernon, New York, A. F. Pattee, 1940, pp. 880. Price $3.

Thirty-seven years ago Alida Pattee wrote and published the first edition of her book now in its twenty-second edition. In this as in the more recent editions, distinguished specialists

in nutrition, medicine and nursing have contributed special material or collaborated in the general preparation of the book.

The contents cover a tremendous amount of subject matter. Excellent chapters on the minerals and the vitamins include tables listing the mineral and vitamin values of foods arranged in the order of their decreasing percentages or descending potencies. Another useful table presents food values in units of average servings and 100 gm. portions in which in addition to protein, fat, carbohydrate and mineral values, vitamin values in International and Sherman units, fiber percentages, acid-base and purine figures are included. Miss Pattee is to be congratulated on the comprehensive scope of her book and the authenticity of its content.

Short Contacts by the Home Economist in Case Work Treatment. Family Welfare Association of America, 122 East 22nd St., New York, 1940, pp. 20. Price 20 cents.

This booklet is divided into two sections; the first, from the point of view of the home economist, Luise Addiss; and the second, from that of the case worker, Monica Jordan. Both illustrate their points with case studies. Mrs. Addis describes the technic of the interview which may be with the mother or in some instances with the father or older children in the family. Miss Jordan, discussing the matter from the viewpoint of the case worker, emphasizes the need for close teamwork between the home economist and the case worker. Miss Jordan feels that since the home economist has but "a brief direct contact with the client" she needs especially keen powers of observation. She believes that the home economist on the staff of a case work agency may be wise to confine the greater part of her teaching to the staff and may contribute most through such participation in treatment.

Diet Manual for the Illinois School for the Deaf, Jacksonville, Illinois. Sponsored by the State Department of Public Welfare, 1940, pp. 170.

This manual represents the work of the dietary project of the Works Project Administration, two years having been spent in its preparation. The study concerns all phases of the administration of the dietary department in a school for the deaf. The subject matter is divided into chapters covering the nutritional problems in the school, the organization of the dietary department, equipment and floor plans, methods for determining food needs, the system of charts for recording the menus served and total calories consumed, and a cookery manual giving information on food preparation, measures and equivalents, table of standard portions, ratios of basic foods, and general rules for cookery.

Quantity and Cost Budget for Dependent Families or Children. Issued by the Heller Committee for Research in Social Economics. Berkeley, California: University of California Press, 1940, pp. 107. Price 20 cents.

This budget includes pertinent articles and costs necessary for maintenance of adults and children from infancy through adolescence, as well as those essential for the family as a whole such as heating and lighting. It is therefore possible to determine the sum necessary for the support of families of all sizes and composition. The booklet consists of specimen detailed budgets, with an appended list of adequate foods at low cost, itemized weekly food allowances, sample menus, and recipes.

Factors Affecting the Nutritive Value of Foods. By E. Neige Todhunter, M. L. Andes, M. Beckman, E. Leatham, E. Meserve and A. Wilson. Pullman, Washington: College of Home Economics, State College of Washington, 1940, pp. 18. Price 15 cents.

An extensive annotated bibliography makes this an excellent reference circular on the effect of variations in soil and fertilizers on the mineral and vitamin content of cereals, fruits and vegetables.

Laboratory Manual to Accompany Fundamentals of Chemistry and Applications. By Charlotte A. Francis and Edna C. Morse. New York: The Macmillan Company, 1940, pp. 152. Price $1.

This manual has been written to accompany *Fundamentals of Chemistry and Applications* by the same authors. It follows, therefore, that all references to "the text" in the accompanying laboratory studies are to this textbook.

The content of the manual is planned for use in chemistry courses of from 45 to 120 hours. Experiments and other assignments that are recommended for the briefer course are marked with an asterisk and for each such study the several experiments thus specified can be performed inclusively within the limits of from 30 to 45 minutes—that is, provided the laboratory is set up efficiently in advance of the students' use, with supplies distributed and readily available so that no time is wasted in hunting for them. Certain experimental studies can be undertaken only in a course of more than 60 hours; these are specified in the context.

* * *

In theory, the hospital administrator is responsible for the conduct of the hospital, and the dietitian is the department head held responsible for the conduct of the dietary department in all its many phases.

In almost all hospitals, the dietitian spends one quarter of the budget or even more. The dietitian, in my opinion, directs the expenditures of the most important quarter because it has been my experience to find that when patients have a food service that pleases them, they are much less apt to find fault with the other three-fourths of the hospital service.

There are five functions for a dietitian to perform; depending on the type and size of the institution in which she is working, they are of varying or equal value. She functions as:

A prudent spender of the dietary budget
A master salesman
An educator
A therapist
A research worker

The nearer she comes to her goal of perfection in each of these functions, the nearer she will be to becoming the hospital administrator's "best quarter."

What makes the dietitian a prudent spender in her administrator's eyes? Her solution of the waste problem. It is not as essential that the plate waste be weighed or that food preparation wastes be utilized; that bread pudding appear perennially on the menu—as that by a study of the plate waste, the menu making may be adjusted to suit the tastes of her clientele.—*Perkins, A. H., The dietitian—her important contribution to hospital service, Hospitals, August, 1940.*

These appetite-inspiring pictures are examples of the many illustrations which beautify the new Pet Milk Cookbook.

Within the pages of this new Pet Milk cookbook, "Any Meal — Any Day — for 2 or 4 or 6," you'll find dishes for every occasion — company dinners, family fare that's tempting to look at and delicious to eat, yet easy to prepare, inexpensive and withal, most wholesome — meals for two or four or six (and more) that are appropriate for the season and suitable to individual tastes and pocketbooks.

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CURRENT LITERATURE

American Journal of Digestive Diseases

Vol. 7, August 1940

The effect of various bile acids on the volume and certain constituents of bile. A. L. Berman, E. Snapp, A. C. Ivy, A. J. Atkinson and V. S. Hough.—p. 333.

American Journal of Diseases of Children

Vol. 60, August 1940

*Oral conditions of children in relation to state of general health and habits of life. R. F. Sognnaes and R. L. White.—p. 283.

*Reasons for the high carbohydrate requirements of infants and children. W. Heymann.—p. 316.

*Value of banana and banana powder in the treatment of infants and children having diarrhea. I. J. Wolman and R. L. Roddy.—p. 333.

ORAL CONDITIONS OF CHILDREN. A study was made of two groups of infirmary outpatients aged 4 to 13 years, selected on the basis of freedom from (group 1) and high frequency (group 2) dental caries. Group 2 presented a complex of pathologic manifestations as compared with the sound oral conditions of the children in group 1. A medical and nutritional study of the children showed that group 1 rated more favorably than group 2 with respect to prenatal and infancy histories, physical condition, adequacy of present diet, appetite and general health standards. Oral conditions are symptomatic of the general health state of the body.

CARBOHYDRATE REQUIREMENTS. The normal diet of the breast-fed infant 3 months of age contains, in percentage of the total calories per kg. of body weight per day, about 4 times more carbohydrate than the normal diet of a 6-year-old child and 10 times more than the diet of an adult. Infants require a high carbohydrate diet because hypoglycemia is easily produced by carbohydrate starvation, glycogen reserves in the liver are low and carbohydrate is important for water retention. Children require a high carbohydrate diet because hypoglycemia is easily produced by carbohydrate starvation and there is a pronounced tendency to ketosis.

BANANA FOR DIARRHEA. Ninety-seven infants and children given mashed banana or banana powder as the principal food were compared with 80 patients who received a variety of recognized therapies. Banana feeding was as effective as the older and more usual regimens. It was well taken and relieved hunger, tenesmus and abdominal discomfort. Banana produced semiformed stools.

American Journal of the Medical Sciences

Vol. 200, August 1940

*Influence of estrogen on the insulin requirement of the diabetic. A. R. Spiegelman.—p. 228.

*Maintenance of nitrogen equilibrium of amino acids administered parenterally. S. S. Altshuler, H. M. Hensel and M. Sahyun.—p. 239.

*Vitamin C nutrition in pellagra. G. A. Goldsmith, A. T. Ogaard and D. F. Gowe.—p. 244.

ESTROGEN ON INSULIN REQUIREMENT OF DIABETIC. The administration of 10,000 I. U. of estrogenic hormone twice a week to a series of 9 diabetic women was associated with a diminution of their insulin requirements. The type of insulin had no influence on the results obtained.

NITROGEN EQUILIBRIUM WITH AMINO-ACIDS. A mixture of amino-acids containing all the essential amino-acids has been prepared which can be administered to normal and postoperative patients subcutaneously or intravenously without untoward reactions. The parenteral administration of an amino-acid mixture could be substituted for protein in the diet to maintain the patient in nitrogen balance. In postoperative cases, the amino-acid mixture was almost completely utilized and aided toward maintaining nitrogen equilibrium.

VITAMIN C IN PELLAGRA. Pellagra is often accompanied by a vitamin C deficiency. The therapeutic regimen should include a diet adequate in all the essential food factors, supplemented by ascorbic acid when a deficiency of this substance is demonstrated.

American Journal of Physiology

Vol. 130, August 1940

*The essential nature of pantothenic acid and another alkali-labile factor in the nutrition of the dog. J. M. McKibbin, S. Black and C. A. Elvehjem.—p. 365.

PANTOTHENIC ACID AND ANOTHER ALKALI-LABILE FACTOR. Evidence is presented for the

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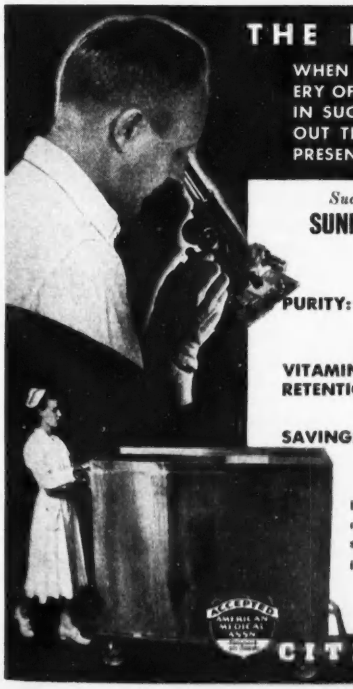

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necessity of pantothenic acid in addition to factor W in the nutrition of the dog. Dogs receiving the alkali-treated factor W preparation and the pantothenic acid concentrate do not show normal growth until other fractions are added to the ration. There is an alkali-labile factor other than pantothenic acid which is essential for the dog.

American Journal of Public Health

Vol. 30, August 1940

*Nutrition and health in Pasadena. H. Borsook and W. L. Halverson.—p. 895.

NUTRITION AND HEALTH. A survey of the diets of 50 families living in Pasadena revealed a significantly large number subsisting on inadequate amounts of calcium, vitamin A and vitamin B_1. No evidence of sub-optimal health was found.

Annals of Internal Medicine

Vol. 13, August 1940

*Nicotinic acid in nutrition. C. A. Elvehjem.—p. 225.
*Anaphylaxis and allergy. C. A. Dragstedt.—p. 248.

NICOTINIC ACID. The importance of using different species when studying human nutrition is demonstrated. There is danger in treating pellagrins on severely deficient diets with pure nicotinic acid as other members of the vitamin B complex may be omitted. This country is sufficiently agricultural to produce foods adequate for normal nutrition. More experimental work is necessary to locate more sources of the vitamin B complex.

ALLERGY. Certain foreign substances, not necessarily protein in nature, can produce the same reactions in experimental animals upon their initial administration as are produced by antigenic agents after a prior sensitization.

Archives of Internal Medicine

Vol. 66, August 1940

*Body build and hypertension. S. C. Robinson and M. Brucer.—p. 393.
*Survey of diabetes: Statistical data with various insulins. B. Smith and W. H. Grishaw.—p. 465.

BODY BUILD AND HYPERTENSION. A study of blood pressures and body build of 3658 persons, showed 17% of the men and 31% of the women to be of the narrow-chested, linear type of build, while 12% of both men and women were of the broad-chested lateral type of build. There was a positive correlation between body build and blood pressure.

DIABETES. Experiments on 800 diabetics show that slowly acting insulin will give good results in patients with mild diabetes. In cases of severe diabetes without complications a morning dose of crystalline zinc insulin together with control at night from protamine zinc insulin gave best results. Physical exercise plays an important rôle in the effectiveness of insulin of the crystalline zinc form. It was necessary to reduce the unit dose of crystalline zinc as much as 10 units when patients were more than normally active.

British Medical Journal

No. 4152, August 3, 1940

*Vitamin C requirements of native mine labourers. F. W. Fox, L. F. Dangerfield, S. F. Gottlich and E. Jokl.—p. 143.
*Improved quality of bread.—p. 164.

No. 4154, August 17, 1940

A rapid method of differentiating children with large or small reserves of vitamin C. J. Pemberton.—p. 217.

VITAMIN C REQUIREMENTS OF LABORERS. One group of 950 laborers remained on their usual diet containing 12 to 25 mg. of ascorbic acid while another group of equal size received an additional daily ration of 40 mg. of ascorbic acid administered in the form of standardized orange juice concentrate. Both groups maintained a high level of general health. Twelve cases of scurvy occurred in the untreated group and one mild case in the group receiving the ascorbic acid supplement. Otherwise no significant difference could be detected. Nearly three-fourths of the individuals examined possessed healthy gums. Plasma ascorbic acid values were extremely low, even in apparently healthy individuals engaged in hard work.

BREAD. The Accessory Food Factors Committee of the Lister Institute and Medical Research Council has examined the ways in which the health of the people of Great Britain might be benefited and recommended that flour should contain the germ of the wheat grain, as much as possible of the aleuron layer, and the finer por-

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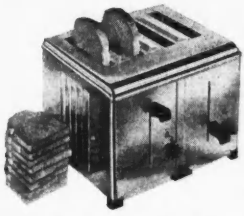

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tions of the bran. Eighty to 85% of the wheat grain should be extracted.

Bulletin of the Johns Hopkins Hospital

Vol. 67, August 1940

*Studies in thiamin excretion. V. A. Najjar and L. E. Holt.—p. 107.

THIAMIN EXCRETION. The daily urinary excretion of thiamin was followed in healthy and sick individuals of different ages. Under normal conditions the excretion varied over a wide range, depending on thiamin intake. The thiamin excretion test consisted in the intravenous administration of 1 mg. thiamin after which the urinary excretion is followed for 4 hours. Thiamin is not excreted by damaged kidneys. Other vitamin deficiencies may exert an influence upon the thiamin excretion curve.

Food Research

Vol. 5, July-August 1940

*Further studies on development of *Clostridium botulinum* in refrigerated foods. F. W. Tanner, P. R. Beamer and C. J. Rickher.—p. 323.
*Relation of mixing methods and a balanced formula to quality and economy in high-sugar-ratio cakes. W. E. Pyke and G. Johnson.—p. 335.
Ascorbic acid content of parsnips. H. L. Mayfield and J. E. Richardson.—p. 361.
A study of concentration and freezing as a means of preserving fluid whole milk. R. T. Corley and F. J. Doan.—p. 369.
Some modifications of the paired-eating method in meat cookery research. S. Cover.—p. 379.
*Riboflavin content of some common vegetables and fruits. A. Z. Hodson.—p. 395.
Effect of fertilizing treatment on vitamin A content of sweet potatoes. P. Swanson, G. Stevenson, E. S. Haber and P. M. Nelson.—p. 431.

BOTULISM IN REFRIGERATED FOODS. Data indicate that *Clostridium botulinum* may sometimes develop and produce toxins in frozen foods which have been allowed to thaw and are then stored at temperatures of 10°C. (50°F.) and above. However, if properly handled and kept frozen until used, frozen foods are probably as safe and satisfactory as fresh foods. In all of these experiments great numbers of *Clostridium botulinum* cells were used. Much heavier inoculation was used than would probably ever be found in the regular product.

HIGH-SUGAR-RATIO CAKES. The principles involved in the maintenance of constant volume (within practical limits) for cake batters as the ingredients of the batter are varied, have been applied in the problem of rebalancing high-sugar-ratio cake formulas for use at various altitudes. Ordinary hydrogenated commercial cake shortening served satisfactorily in the preparation of balanced cake batters high in liquid when the modified single-stage method of mixing was used. The data permits the formulation of an indefinite number of whole-egg, butter-type cake formulas for any selected altitude up to 10,000 feet. Optional sugar content is permitted.

RIBOFLAVIN CONTENT OF VEGETABLES AND FRUITS. A table of the riboflavin content in micrograms of 47 samples of common fruits and vegetables is presented. The green vegetables, such as spinach, lettuce, broccoli and Swiss chard, proved to be the best vegetable sources of riboflavin, especially when the riboflavin content is considered on the basis of dry weight.

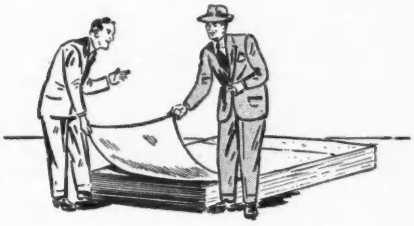
Hygeia

Vol. 18, August 1940

*The stop-hemorrhage vitamin. N. Fabricant.—p. 691.
*We call it allergy. L. M. Miller.—p. 699.
*Refinement of food and its effect on our diet. E. M. Koch.—p. 703.
*Self rising flours and mixes.—p. 721.
Soft drinks for summer. H. M. Fyler.—p. 724.
Meat for the males.—p. 728.

STOP-HEMORRHAGE VITAMIN. Recently discovered vitamin K can stop hemorrhage under certain conditions. It assures a new lease on life for those babies who formerly were in danger of bleeding to death during the first week of their lives. Adults who are victims of obstructive jaundice have a better chance of recovery. Danger of hemorrhage arises from a lack of prothrombin. The richest natural source of vitamin K is alfalfa or spinach. A synthetic product, inexpensive and easily prepared, has been perfected, but is not yet available except for experimental purposes.

ALLERGY. One out of every 10 Americans has a major form of allergy. Allergy is a physical condition, inherited in about 75% of the cases, which causes the victims to have explosive reactions to ordinarily harmless, seemingly innocent substances.



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REFINEMENT OF FOOD. The United States now consumes annually per capita, flour from 4 bu. wheat, and about 100 lb. sugar. A hundred years ago the annual per capita consumption was 5 lb. and whole cereal products provided about 32% of the total calories. Sugar does not provide any vitamin B_1. The changed food habits of this generation are exerting a deleterious effect upon the national health. Beriberi, pellagra, scurvy, and riboflavin deficiency commonly occur. A more general use of whole cereal breakfast foods and of whole wheat and whole rye breads is possible and should be encouraged.

SELF-RISING FLOURS AND MIXES. Self-rising flours, pancake flours, biscuit mixes and gingerbread mixes are compounded of wholesome ingredients. They usually contain a leavening agent, shortening, sweetening, a binding ingredient, dried milk or dried egg and flavoring. Accepted brands of self-rising flours and mixes are listed.

Journal of the American Medical Association

Vol. 115, August 3, 1940

*Dermatitis following the wearing of Nylon stockings: Preliminary report of four cases. S. J. Fanburg.—p. 354.
*The therapy of rickets. E. A. Park.—p. 370.
*Treatment of blood disorders: X. Effects produced by drugs.—p. 379.

Vol. 115, August 10, 1940

*The therapy of subvitaminosis B_1. B. Fantus, E. F. Traut and R. S. Greenebaum.—p. 450.
*Management of diabetic emergencies: I. General treatment.—p. 454.

Vol. 115, August 17, 1940

*Vitamin P in vascular purpora. I. N. Kugelmass.—p. 519.
*Pantothenic acid in human nutrition. T. D. Spies, S. R. Stanbery, R. J. Williams, T. H. Jukes and S. H. Babcock.—p. 523.
Management of diabetic emergencies: II. Treatment of surgical patients and children.—p. 529.
Food and the war. Editorial.—p. 536.
Ionized calcium in milk. Editorial.—p. 538.

Vol. 115, August 24, 1940

*Treatment of psoriasis. J. F. Madden.—p. 588.
*Plasma proteins. Editorial.—p. 616.

Vol. 115, August 31, 1940

*Care of premature infant. E. C. Dunham and J. M. Bierman.—p. 658.
*Vitamin deficiency. Editorial.—p. 785.

DERMATITIS FROM WEARING NYLON STOCKINGS. Four cases of dermatitis of the legs and thighs followed the wearing of Nylon stockings. The dye or finish used in preparing the hose may have been a primary cutaneous irritant, while Nylon itself is probably innocuous.

RICKETS. Rickets can be prevented and cured by irradiation of the skin with ultraviolet rays and by the ingestion of vitamin D. Only two of the 11 existent forms of vitamin D have a practical importance, activated ergosterol and activated 7-dehydrocholesterol. No one knows how vitamin D acts. It increases the absorption of calcium and phosphorus from the alimentary tract. Vitamin D is contained in only a few foods, namely fish and eggs. The diet furnishes virtually no vitamin D. The first few months of life is the period of greatest susceptibility to rickets. Refractory rickets is seen in children over 3 years of age. Ultraviolet radiations reach the body directly or by reflection. Window glass, clothing and foreign particles absorb or remove all radiations shorter than 315 millimicrons. Various vitamin D preparations, their use, advantages and comparative cost are discussed. Cod liver oil is more economical than other forms of vitamin D.

TREATMENT OF BLOOD DISORDERS. The blood and the blood-forming organs exhibit a special susceptibility to foreign substances. Toxic effects have been reported for the greatest diversity of chemical agents. Deficient diets increase the toxicity of various drugs. In some instances this is related to vitamin intake. A well-balanced, nutritious diet should be given, and added vitamins are probably of value. In cases of chronic lead poisoning it is recommended that storage of lead in the bones be promoted by giving a high calcium diet and vitamin D.

SUBVITAMINOSIS B_1. Subvitaminosis B_1, beriberi and thiamin deficiency are synonymous terms. "Dry beriberi" occurs in all economic classes. The usual diet of refined foods deprives one of some of the richest sources of thiamin and at the same time increases the need for it. The body requirements for vitamin B_1 are proportional to the metabolic rate and the non-fat calorigenic intake. No food contains a large amount of vitamin B_1. Thiamin deficiency must be suspected when there is an inadequate

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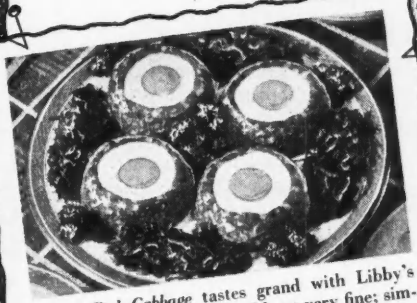

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intake of foods containing vitamin B_1, when absorption is inadequate, or when there is increased need, disturbed utilization or disturbed distribution of vitamin B_1. The average adult needs from 1 to 1.5 mg. of thiamin hydrochloride daily. Nuts are the richest of any ordinary foods. Liver, pork, peas and other legumes, wheat germ and brewers' yeast are also important sources.

DIABETIC EMERGENCIES. Insulin is a protein and its synthesis awaits further knowledge of the chemistry of proteins. It has a very large molecule which prevents its absorption from the gastro-intestinal tract. Zinc is essential for the crystallization of insulin. A method for the clinical management of the diabetic patient is outlined. Coma and insulin are discussed.

VITAMIN P IN PURPURA. A solution of eriodictyol glucoside and hesperidin, vitamin P concentrate, administered orally, was effective in treatment of two children with allergic purpura, a child with infectious purpura and an infant with nutritional purpura, and ineffective in three cases of mechanical purpura. Vitamin P constitutes another valuable adjuvant in the management of vascular purpura, provided the underlying cause is cleared.

PANTOTHENIC ACID. Pantothenic acid can be synthesized and is available in pure form. One hundred mg. calcium or sodium pantothenate injected intravenously does not cause a reaction or change in blood pressure, pulse, temperature or respiration. The pantothenic acid content of the blood and urine increased almost immediately but returned to normal in 24 hours. Following the injection of pantothenic acid there is a rise in the riboflavin level of the blood. Pantothenic acid is essential to human nutrition and is probably associated with riboflavin.

PSORIASIS. Vitamin D is a dangerous medication in some cases of psoriasis. The treatment of choice is a low fat diet plus 1000 I.U. vitamin B_1 daily by mouth, combined with an exfoliating ointment.

PLASMA PROTEINS. The liver is probably the site of origin of the proteins of the plasma. The production of fibrinogen is definitely dependent on liver function. While the body has the power to synthesize proteins, it must have the proper building materials. There is a reserve store of building material for plasma proteins. These plasma proteins are only part of a balanced system wherein a steady "ebb and flow" exists between them and other proteins of the body.

PREMATURE INFANTS. In 1938 there were more than 31,000 neonatal deaths reported by the U. S. Bureau of the Census as directly due to premature birth. Breast feeding is important for the welfare of the premature infant. The diet of the lactating mother demands special attention in order that her milk be of the best.

VITAMIN DEFICIENCY AND MYONEURAL RESISTANCE. Dietary deficiencies in nursing mothers may retard the development of effective constitutional barriers against virus infections in nursing young, even though there is no retardation of normal growth or weight. With maternal diets deficient in vitamin E or in certain components of the vitamin B complex there was a definite retardation in the normal development of the myoneural barrier for mice. The greatest retardation was noted in groups of sucklings in which the maternal diet had been partially denatured by overcooking.

Journal of Biological Chemistry

Vol. 135, August 1940

*The effect of supplementary cystine and methionine on the production of fatty livers by rats on high fat diets containing casein or edistin. H. F. Tucker, C. R. Treadwell and H. C. Eckstein.—p. 85.

*The biological demethylation of sarcosine to glycine. K. Bloch and R. Schoenheimer.—p. 99.

*Decreased fatty acid utilization by male rats following the administration of carbontetrachloride. I. C. Winter.—p. 123.

*The ability of citrulline to replace arginine in the diet of the chick. A. A. Klose and H. J. Almquist.—p. 153.

*Ketogenic activity of acetic acid. E. M. MacKay, R. H. Barnes, H. O. Carne and A. N. Wick.—p. 157.

*Ketogenic action of short chain, even numbered carbon fatty acids in carbohydrate-fed animals. E. M. MacKay, A. N. Wick and C. P. Barnum.—p. 183.

*The comparative action of choline and betaine in effecting the replacement of methionine by homocystine in the diet. J. P. Chandler and V. du Vigneaud.—p. 223.

*Lipid metabolism in brain and other tissues of the rat. W. M. Sperry, H. Waelsch and V. A. Stoyanoff.—p. 281.

*Phosphorus changes during the absorption of oil and glucose. R. Reiser.—p. 303.

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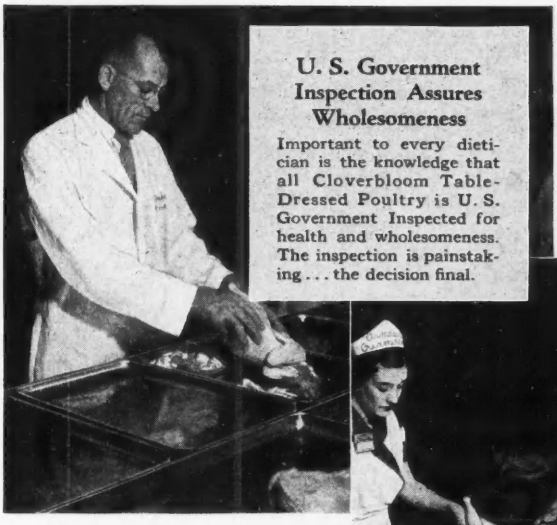

U. S. Government Inspection Assures Wholesomeness

Important to every dietician is the knowledge that all Cloverbloom Table-Dressed Poultry is U. S. Government Inspected for health and wholesomeness. The inspection is painstaking . . . the decision final.

Story of a New Kind of Poultry

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Table-Dressed Poultry

Why Cloverbloom Means New Food Value . . . New Ease of Preparation . . . Assured Wholesomeness!

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Cloverbloom offers a new kind of poultry . . . new because every bird is completely drawn, so that the Cloverbloom user buys only fine, edible poultry, with no waste parts. High-pressure washing assures cleanliness. And fast-freezing protects all the tenderness, flavor and freshness of this poultry until it is cooked and served.

The Cost? Finer Poultry for the Price of Ordinary Birds!

Cloverbloom Table-Dressed Poultry costs more *per pound*, but approximately the same *per bird* as ordinary poultry. There is no expense of shipping and refrigerating waste parts. This new kind of poultry brings the Institutional Dietician savings in preparation time . . . assured, Government-approved wholesomeness . . . a constant high standard of flavor, tenderness, food value. It is wise to measure your poultry buying against Cloverbloom standards and extra values. And this finer poultry is obtainable at all modern food stores and food dealers now.

Make Cloverbloom Your Poultry Buying Guide . . . Here's Why:

1. Cloverbloom Table-Dressed Poultry is fine poultry, completely dressed and ready to cook and serve. It eliminates last-minute handling.

2. Each Cloverbloom Table-Dressed bird is prepared for a particular type of cooking . . . with type identification and actual weight clearly marked on its package. It is available as:
ROASTERS . . . completely drawn, with giblets wrapped separately inside bird.
FRYERS . . . drawn and cut up family style.
BROILERS . . . drawn, and split.
FOWL FOR STEWING . . . disjointed in home style.
Turkeys—Capons—Ducklings also available.

3. Cooking instructions come with every Cloverbloom Table-Dressed Bird, and for every type.

4. CLOVERBLOOM TABLE-DRESSED POULTRY . . . ALL OF IT . . . IS U. S. GOVERNMENT INSPECTED FOR HEALTH AND WHOLESOMENESS.

ARMOUR AND COMPANY

*The complex nature of the alcohol precipitate factor required by the chick. A. E. Schumacher, G. F. Heuser, and L. C. Norris.—p. 313.

CYSTINE, METHIONINE AND LIVER FAT. The lipotropic effect in rats of a low-protein, high-fat diet supplemented with methionine and cystine to the extent that the sulfur amino-acid content was equivalent to that of a 20% casein diet, was similar to that observed when the level of the casein in the unsupplemented diet was raised to 20%. Fatty livers were obtained when the casein content of the unsupplemented high fat diet was decreased 15 or 5%. The effects obtained on the lipid content of the rats on different diets are explainable on the basis of the methionine and cystine contents of the diets.

DEMETHYLATION OF SARCOSINE TO GLYSINE. Adult male rats of constant weight were kept on a casein-containing stock diet to which an amount of sarcosine corresponding to 23 mg. nitrogen per day was added. Results indicate that sarcosine is directly demethylated to form glycine without deamination. The demethylation process is very rapid and must have occurred during or immediately after absorption.

FAT METABOLISM. The fatty acid balance of male albino rats fed a diet containing 10% fatty acids was determined over a period of 14 days. In each case the disappearance or "loss" of fatty acids was noted. When liver damage was produced by carbon tetrachloride treatment, the fatty acid loss was less than in normal animals kept under similar conditions. Liver damage produces a change in fat metabolism which results in a decreased oxidation or other conversion of fatty acids and an increased destruction or decreased synthesis of sterol.

CITRULLINE IN DIET. The ability of citrulline to replace arginine as a supplement to an arginine-low diet for the chick has been demonstrated. The inability of ornithine to replace arginine effectively has been confirmed.

KETOGENIC ACTIVITY OF ACETIC ACID. When acetic acid is fed to a phlorhizinized dog or to fasting rats, there is an increase in the excretion of acetone bodies in the urine. Blood acetone body concentrations show that this is due to the conversion of acetic acid to acetoacetic acid.

KETOGENIC ACTION OF FATTY ACIDS. Capric acid and other fatty acids with an even number of carbon atoms and with shorter chains are ketogenic even when adequate amounts of carbohydrate are fed. Fatty acids of C_{12} to C_{18} are not ketogenic. Perhaps the lower fatty acids are ketogenic in the presence of large amounts of liver glycogen, because unlike the longer chain acids they cannot be stored as body fat and hence are oxidized at once.

CHOLINE AND BETAINE. Choline has been found to be more effective than equivalent amounts of betaine in enabling an animal to utilize homocystine in place of methionine. Both compounds are active in this respect whether administered *per os* or parenterally.

LIPID METABOLISM. The distribution of labile fatty acids in the brain, liver, intestine, and remaining carcass of adult rats was determined at varying intervals after the administration of a single small amount of deuterium-containing fat. Only traces of the fatty acids were found in the brain. The largest concentrations were in the liver and intestine. Although the concentration was small, a large but variable proportion of the total amount given was found in the depot fatty acids.

PHOSPHORUS METABOLISM DURING ABSORPTION. There is a decrease in serum and urinary inorganic phosphate after the ingestion of olive oil by humans. There is a decrease in serum but an increase in urinary phosphorus after the oral or intravenous administration of glucose.

ALCOHOL PRECIPITATE GROWTH FACTOR. Evidence has been presented showing that chicks require 2 dietary growth factors not identical with the following known vitamins or factors: vitamin A, vitamin D, α-tocopherol, vitamin K, thiamin, pyridoxine, riboflavin, pantothenic acid, nicotinic acid, the grass juice factor, factor W, the antiencephalomalacia factor, the chondroitin sulfuric acid growth factor, the cartilage growth factor, the antiparalytic factor of Jukes, and the polished rice factor reported by Stokstad and Manning. Whether or not either one of the factors reported in this paper is identical with factor U cannot be stated.

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WITH BRAN, ONLY AND MALT FLAVORING
A NATURAL LAXATIVE CEREAL

Journal of Laboratory and Clinical Medicine

Vol. 25, August 1940

*Nutrition and nervous excitability. L. Marks and H. Necheles.—p. 1177.

*Interrelation between the vitamin B complex and the anterior lobe of the pituitary gland. D. C. Sutton and J. Ashworth.—p. 1188.

NUTRITION AND NERVOUS EXCITABILITY. In order to explain the difference in metabolic rate between the Chinese and Westerners, experiments were conducted in China and in the United States to determine the effects of various foods on the neuromuscular system. The skin resistance of Chinese in Peiping apparently decreased after a protein meal, while that of Westerners in Chicago did not.

VITAMIN B COMPLEX AND PITUITARY GLAND. An extract of the anterior lobe of the pituitary gland will cause recovery of pellagra lesions when they have failed to respond to nicotinic acid, riboflavin, parenteral liver, and an adequate diet.

Journal of Nutrition

Vol. 20, August 1940

*Ascorbic acid content of goat's milk and blood: Influence of ascorbic acid injection and diet. M. S. Richmond, G. H. Satterfield, C. D. Grinnels and W. J. Dann.—p. 99.

*The effect of complementing factors on the quantitative response and specificity of vitamin B_6. G. C. Supplee, R. C. Bender and O. J. Kahlenberg.—p. 109.

*Cereal and rickets. XII. The effect of calcium and vitamin D on the availability of phosphorus. C. H. Krieger and H. Steenbock.—p. 125.

*The biological assay of riboflavin. M. F. Clarke, M. Lechycka and C. C. Cook.—p. 133.

*The effects produced by decreasing the calcium and phosphorus intake on calcium and phosphorus absorption and deposition and on various bodily constituents of the rat. G. Bachmann, J. Haldi, W. Wynn and C. Ensor.—p. 145.

*The relation of phytin to the calcifying action of citrates. H. G. Day.—p. 157.

*A biological assay of riboflavin in the liver of the cow, calf, sheep, lamb, and hog. O. B. Saffrey, H. S. Cox, B. L. Kunerth and M. M. Kramer.—p. 169.

*The riboflavin content of certain hays and grasses. C. H. Hunt and R. M. Bethke.—p. 175.

*Histological studies of the tissues of rats fed a diet extremely low in phosphorus. R. H. Follis, H. G. Day and E. V. McCollum.—p. 181.

ASCORBIC ACID IN MILK AND BLOOD. The average ascorbic acid content in the blood of 5 goats ranged between 0.6 and 0.8 mg. per 100 cc., and in the milk varied between 0.5 and 2.0 mg. per 100 cc. There was no consistent relationship between the content of the milk and that of the blood. Following injections of 1 or 2 gm. ascorbic acid intraperitoneally, a rapid and marked rise in blood ascorbic acid, a rapid and very marked rise in urine ascorbic acid and a slower, slight rise in milk ascorbic acid were observed. Observations on 4 other goats fed alternately a normal and a vitamin C-free diet indicated that the ascorbic acid of the blood is not closely dependent on the amount of ascorbic acid in the diet, suggesting that the goat is independent of a dietary supply of ascorbic acid. The diet probably affects the ascorbic acid content more than that of blood.

FACTORS COMPLEMENTING VITAMIN B_6. Vitamin B_6 does not permit continued growth unless an unidentified factor present in rice polish factor II is also supplied. The specificity of vitamin B_6 for the prevention of acrodynia and exfoliative dermatitis of the extremities is dependent upon the complementing factor or factors contained in rice polish concentrate.

AVAILABILITY OF PHOSPHORUS. In feeding experiments with rats the availability of phytic acid phosphorus was markedly affected by the calcium and vitamin D content of the diet. Increases in the calcium content of the rations decreased the availability of phytic acid phosphorus. Inorganic phosphorus was not markedly affected by an increase in calcium even up to a ratio of 6:1. Different sources of calcium had a small but definite differential effect on the utilization of phosphorus. Vitamin D improved the utilization of both forms of phosphorus.

BIOLOGICAL ASSAY OF RIBOFLAVIN. A study of the rat growth method for the biological assay of riboflavin was made. Comparisons of extracts of rice polishings, whole wheat and yeast, used as sources of the vitamin B complex other than riboflavin, indicated that the rice polishings concentrate after one adsorption with fullers' earth is the most satisfactory supplement.

LOW CALCIUM AND PHOSPHORUS INTAKE. The effects of lowering the calcium and phosphorus intake of albino rats were studied over a period of 70 days. The progressive decrease in the

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calcium and phosphorus percentage of the food mixture resulted in a corresponding diminution in the wet weight, dry weight, ash, calcium and phosphorus content of the bone and an increase in the percentage of organic material. The calcium and phosphorus content of the body was correlatively less with the lower calcium and phosphorus intake. The protein content of the body was less with the low calcium and phosphorus intake than on the basal ration.

CALCIFYING ACTION OF CITRATES. Studies have been made of the effect on bone ash of young rats fed (a) cereal rations and (b) "purified" rations containing a mixture of citric acid and sodium citrate and different amounts of calcium and phosphorus. Citrates promote calcification in the bones when added to cereal rations high in calcium and low in phosphorus. With a purified ration, citrate does not promote calcification when the calcium level is high and phosphorus low. Citrates have no appreciable effect on calcification when the diet contains moderate levels of calcium and phosphorus, or is low in calcium and high in phosphorus, irrespective of whether a cereal ration or a purified one is used.

RIBOFLAVIN VALUE OF LIVER. Lamb liver showed the greatest potentiality for producing a gain in weight in rats and was estimated to contain 4950-5400 micrograms riboflavin per 100 gm.; mutton liver, 4350 micrograms; calf liver, 3450-4350 micrograms; and beef liver, 2850-3450 micrograms per 100 gm. Pork liver, estimated to contain 2700 micrograms per 100 gm., ranked lowest in riboflavin value. Liver samples purchased in the winter season were slightly higher in riboflavin value than samples purchased in the fall.

RIBOFLAVIN IN HAYS AND GRASSES. The riboflavin content, per unit of weight, of alfalfa and timothy plants decreased as the plants matured. Oat, wheat, and bluegrass plants were studied only at one stage of maturity. Alfalfa plants exposed to strong sunshine for 48 hours after cutting suffered a loss of about 25% of their riboflavin content. Plants such as oats, wheat, bluegrass, and timothy offer a very good source of riboflavin in the early stages of development.

TISSUES AND LOW-PHOSPHORUS DIET. Detailed microscopic studies were made on tissues from rats restricted to a diet extremely low in phosphorus but adequate in all other respects. Marked skeletal rarefaction occurs with accompanying rickets. The thymus gland and the reproductive system showed the effect of inanition most strongly.

Lancet

Vol. 239, August 17, 1940

*Antiscorbutic value of fruits and vegetables. M. Oliver.—p. 190.
*Muscular disorders and nutritional deficiency.—p. 199.
Treatment of Addison's disease.—p. 200.
*Effect of vitamin A therapy estimated by a rapid optical test. E. J. P. Steele.—p. 205.

ANTISCORBUTIC VALUES OF FRUITS AND VEGETABLES. The antiscorbutic value of fruits and vegetables as normally consumed and the outstanding factors influencing this value are reviewed. The amount of ascorbic acid in similar fresh fruits or vegetables usually varies widely according to maturity, time of picking, variety, season and soil. Figures are given on the amount of ascorbic acid normally found in certain fruits and vegetables.

MUSCLE DISORDERS AND NUTRITIONAL DEFICIENCY. Vitamin E is identical with the muscular-dystrophy factor. The synthetic product α-tocopherol will prevent or cure the disease. In rats the muscular dystrophy caused by deficiency of vitamin E can be prevented or arrested by administration of the vitamin, but is not so readily cured.

VITAMIN A THERAPY. A rapid visual test for vitamin A deficiency is described and results are given. Treatment with vitamin A produces definite improvement in the group as a whole, though some do not respond, or even deteriorate. Vitamin D does not increase the effectiveness of treatment with vitamin A.

Ohio State Medical Journal

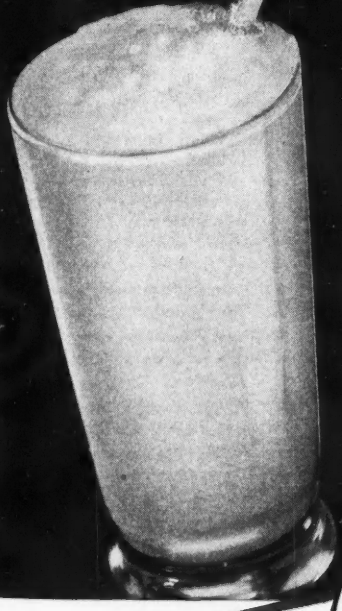
Vol. 36, August 1940

*Diabetes mellitus. F. Anzinger.—p. 855.

DIABETES MELLITUS. The etiology, diagnosis, symptomatology and treatment of diabetes in children and adults are discussed.

DRINK A RIPE BANANA IN

Banana Milk Shake



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BANANA MILK SHAKE

1 fully ripe banana* 1 cup COLD milk

**Use fully ripe banana . . . peel well flecked with brown*

Peel banana. Slice into a bowl and beat with electric mixer or rotary egg beater until smooth and creamy. Add milk and mix thoroughly. Serve COLD. Makes a 10 to 12 ounce drink.

NOTE: If electric drink mixer, which crushes fruit while mixing, is used, break banana into mixer cup, add milk and mix.

Add ice cream before mixing, if desired.

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Pennsylvania Medical Journal

Vol. 43, August 1940

*Nutritional disturbances in relation to skin diseases. G. C. Andrews.—p. 1535.

Diabetes. IV. Education of the diabetic patient. A. O. Stephens.—p. 1579.

NUTRITIONAL DISTURBANCES IN RELATION TO SKIN. In addition to those deficiency syndromes which are well recognized, there are a variety of other abnormal conditions of the skin and mucous membranes in which the vitamin B complex is an important factor. The action of nicotinic acid and riboflavin on oral lesions is sufficient to warrant this mode of therapy as a routine prior to operation in cases in which other oral lesions are associated with carcinoma of the tongue or buccal cavity. There are 36 known constituents in the diet which are essential to adequate nutrition and it is likely that there are others as yet unknown. Very little is understood concerning the body's requirements for some of these factors, and even less is known of the interrelationship of these substances in metabolism.

Public Health Reports

Vol. 55, August 16, 1940

*Fluorides in food and drinking water. A review.—p. 1505.

Vol. 55, August 30, 1940

*The distribution of selenium in plasma and liver proteins and its fractionation in tryptic liver digests. B. B. Westfall and M. I. Smith.—p. 1575.

FLUORIDES. The endemic tooth hypoplasia known as mottled enamel is caused by drinking waters containing toxic quantities of fluorides. Fluorides occur in some foods. Fluorine retention in rats equals about 30 to 40% of the intake. The majority of retained fluoride was deposited in the bones and teeth. The degree of tooth hypoplasia correlated with the quantity of fluorine present. An accumulation of abnormal and perhaps pathologic quantities of fluorine in the bones of adults living in these areas is probable.

SELENIUM. The distribution of selenium in plasma and liver proteins of chronically poisoned animals was studied. Selenium occurred in all proteins examined, though predominantly in the globulins. Tryptic digestion of the selenized liver releases about 80% of the selenium from its protein combination. The separation of the selenium compound does not parallel that of cystine.

Science

Vol. 92, August 9, 1940

*Radio-iron in plasma does not exchange with hemoglobin iron in red cells. P. F. Hahn, W. F. Bale, J. F. Ross, R. A. Hettig and G. H. Whipple.—p. 131.

Vol. 92, August 16, 1940

*A deficiency disease of foxes. R. G. Green and C. A. Evans.—p. 154.

Vol. 92, August 23, 1940

Synthesis of the pyridine analog of vitamin B_1. A. H. Tracy and R. C. Elderfield.—p. 180.

Vol. 92, August 30, 1940

*Pantothenic acid and nutritional achromotrichia in rats. P. Gyorgy and C. E. Poling.—p. 203.

RADIO-IRON IN PLASMA. Radio-iron provides a relatively simple and accurate method of tracing the course of iron absorption and transfer within the body. Iron bound in hemoglobin is fixed and incapable of exchange with plasma radio-iron or artificial solutions of radio-iron.

DEFICIENCY DISEASE OF FOXES. A common and highly destructive dietary disease of silver foxes in captivity is pathologically the counterpart of Wernicke's hemorrhagic polioencephalitis of man. The disease in foxes is caused by feeding fish as 10% or more of the diet. The fish may induce a B_1 avitaminosis which causes the characteristic pathology and the resultant symptoms.

PANTOTHENIC ACID AND NUTRITIONAL ACHROMOTRICHIA IN RATS. Depigmentation of the fur, so-called "greying" in black and piebald animals and "rusting" in albino animals, can be produced with great regularity in rats fed a vitamin B-free basal diet supplemented with thiamin, riboflavin and vitamin B_6 in an amount of 20 micrograms of each daily. Pantothenic acid has a definitely curative effect on nutritional achromotrichia in rats fed a diet free from pantothenic acid.

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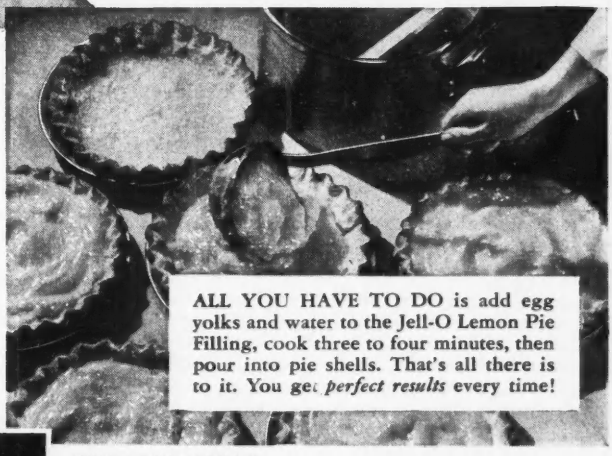

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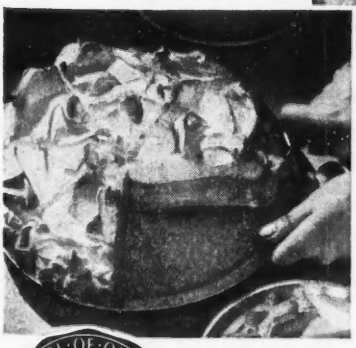

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A NEW PRODUCT OF GENERAL FOODS

INSTITUTION MANAGEMENT

American Restaurant Magazine

Vol. 24, August 1940

*How many times do they pass you by? A. M. Snapper.—p. 20.
*We found what we wanted in pie crust. M. B. Strause.—p. 22.
Mrs. Freeman's menu suggestions for August.—p. 29.
*High profits make sandwich sales popular. G. L. Wenzel and S. Mallick.—p. 36.
*New and improved equipment.—p. 48.

STORE FRONT AND WINDOW DISPLAYS. Attractive store fronts, entrances and window displays are valuable aids in attracting new customers and increasing the prestige of the restaurant. Effective lighting, display of attractive, clean menus, production of high quality food and courteous service will add to a customer's first favorable impression created by an up-to-date entrance.

PIE CRUST. A new "egg-shell" pie crust recipe produces a thin, crisp crust. The formula calls for soft winter wheat flour, syrup and egg whites with lard as shortening. Each step of the procedure is carefully described, particularly at those points where precautions are necessary to ensure a perfect product.

SANDWICHES. Most sandwiches are high-profit menu items with a food cost range of 25 40%. Helpful suggestions for improving the fine details of sandwich making and new recipe combinations offer an incentive to plan more sandwiches on the menu. A chart of specifications for sandwich ingredients gives the unit cost and net yield for each food item used in the filling.

NEW EQUIPMENT. Lemon wedges served in the new cellophane lemon shield developed by Best Novelty Mfg. Co., Chicago, increases attractiveness and improves sanitation of service. A new griddle frame for eggs and meat recently introduced by Albert M. Weiss, Milwaukee, prevents eggs from spreading and self-bastes the eggs as well. The frame can also be used for making hamburgers, or as a casserole for serving meat.

Buildings and Building Management

Vol. 40, August 1940

*Novel corridors help upstairs shops. J. E. Tufft.—p. 22.
*Rental salesmanship. E. J. Jenner.—p. 24.
*Guarding special fire hazards. P. W. Eberhardt.—p. 28.
Systematic management stops profit leaks. M. Bridston.—p. 38.
*Yearly record of cleaning supplies. C. H. Isenbecker.—p. 42.

CORRIDORS. Graduating corridors, *i.e.* corridors growing narrower 2 ft. at a time through the use of bays planned to give better visibility into shops with plate glass fronts, is a new development in interior physical plant construction designed as an increased merchandising asset on the upper floors of the Merchandise Mart Building, Los Angeles.

RENTING. The third and last of a series of articles on rental salesmanship presents a questionnaire listing questions concerning equipment and operating practices that may be asked by the prospective tenant.

FIRE HAZARDS. Fires originating from inflammable liquids held in storage rooms of buildings are quickly controlled by automatic storage room protection. Carbon dioxide or "dry-ice" vapor is stored under high pressure in steel cylinders outside the storage room set aside for inflammable materials. Heat sensitive detectors are located on the ceilings of the storage room. These automatically open the valves on the steel cylinders a few moments after the fire breaks out. The carbon dioxide, rushing into the pipes, is sprayed through nozzles onto the fire smothering it almost instantly.

CLEANING SUPPLIES. A form for keeping a yearly record of cleaning supplies is recommended for use in figuring the annual budget, comparing consumptions with other years, ordering the proper quantities of cleaning materials, and as a control of cleaning supply expenditures.

Food Industries

Vol. 12, August 1940

*Keeping out the bacteria. P. S. Prickett and N. F. True.—p. 34.
*New wrapper solves problem for packers. Editorial.—p. 42.
*Hot water and paint give effective maintenance. A. Conlin.—p. 50.
*Facts about "artificially" ripened fruit. N. C. Thornton.—p. 51.
*Invisible light shows up defects in foods. C. H. S. Tupholme.—p. 53.

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FOR years the medical profession has recognized the value of Ovaltine, as a supplementary food for invalids, convalescents, pregnant and nursing mothers, elderly people—patients of all ages who need "building up."

Now, in light of the new knowledge of food deficiency diseases, Ovaltine is acquiring a new and added importance. For research is discovering a wider prevalence of food deficiencies in children and adults of all income levels—due to dietary idiosyncrasies and the use of highly refined modern foods. And recently, in step with this new knowledge, *Ovaltine* has been further enriched with added amounts of many of the protective food factors most likely to be lacking.

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Therefore, many physicians are now prescribing *new, improved Ovaltine* in cases requiring extra nourishment that is rich in protective food elements, in easily digested form.

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NEW, IMPROVED *Ovaltine*

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War brings new methods to British food industries. E. Hardy.—p. 54.
New packages and products. Editorial.—p. 58.
*Keeping qualities on spices. C. Griebel and G. Hess.—p. 88.
*Rare proteins in whey. M. and S. P. L. Sorenson.—p. 90.
*Refining edible oils.—p. 91.
*Vinegars from dried fruit. H. Mostny.—p. 91.
Yeast fermentation in cucumber pickle making. J. L. Etchells.—p. 92.
Commercial mustard production. A. V. Pease.—p. 92.
*Human tolerance to coffee. B. Behrens and G. Malorany.—p. 93.

BACTERIA. Practical steps necessary in plant operation to obtain a highly sanitary product have been developed in the Bacteriological and Chemical Laboratories of Mead Johnson & Co., Illinois. These steps are applicable to quality control in food manufacturing plants as well as institution kitchens. Technics for ensuring the use of clean raw materials, processed with sterilized equipment, operated by clean workers, and packed in sanitary containers are described in detail.

NEW WRAPPERS. Meat manufacturers have adopted a new rubber hydrochloride wrapper. This "pliofilm" wrapper reduces shrinkage, spoilage due to mold formation, and improves the quality of the product. Labor costs are lower because the number of steps formerly necessary for packaging are reduced, permitting a package attractive in appearance and of lower initial cost.

EQUIPMENT MAINTENANCE. Yearly painting of equipment, pipes, walls, and ceilings plus frequent washings of the paint surfaces with hot water, are the principal items of cleanliness and maintenance recommended for plant manufacturing equipment.

ARTIFICIALLY RIPENED FRUIT. Fruit chemically ripened by ethylene gas has both an unnatural and unpleasant color and flavor. A better method is to store the unripe fruit under correct conditions for the necessary period of time to allow for ripening.

FOOD DEFECTS SHOWN. Raw materials and finished products are being tested by mercury-vapor ultraviolet lamps with quartz inner tubes to bring out fluorescence. The addition of substitutes or possibly poisonous substances are detected, and purity, grade, freshness and percentage composition are determined. The light is used on flour, sugar, butter, preserves, eggs, cheese and fish with informative results.

KEEPING SPICES. Grinding processes, exposure conditions, and loss of essential oils and other components, cause deterioration of spices. Tests show spices keep best in glass tubes with metal tops or in parchment or transparent cellulose paper. Tin canisters serve the purpose, but may rust.

WHEY PROTEINS. Whey of milk can be an important source of rare soluble proteins through use of a method recently developed in Denmark. These proteins isolated into fractions by fractional crystallization or coagulation are "Lactomucin," globulin, and a gelatinous protein soluble in water. The proportion of these fractions in whey proteins varies a great deal but in general the water-insoluble globulin makes up 50% and the water-soluble gelatinous protein and water-insoluble last fraction constitute 10% each of the total whey proteins.

REFINING EDIBLE OILS. Oils, fats, and fatty acids are bleached and purified by treatment with a powdered compound of a reducing or oxidizing metal. Through special heating, mixing, and filtration processes, the nonfatty impurities are removed and the fatty acids retained.

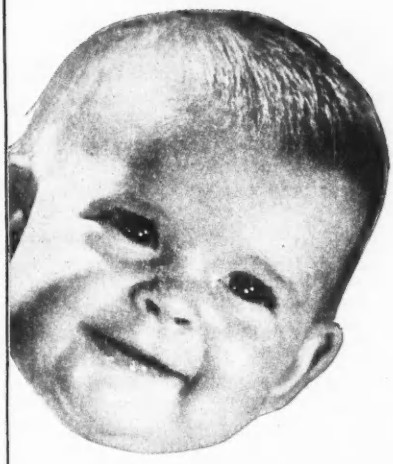
VINEGARS. Vinegar with more than 5% acetic acid can be made from dried or partially dried fruits. Alcoholic fermentation gives it a high alcoholic concentration. The final acetone fermentation produces acetic acid in the specified concentration.

COFFEE TOLERANCE. Human tolerance to coffee is related to the presence of an emetic substance in coffee. Tests upon animals show that the high acid content (*e.g.* from Costa Rica) rather than caffeine content causes the emetic action. Coffee treated with superheated steam (Lendrich process) loses half its emetic action.

Hospital Management

Vol. 50, July 1940

*Five major factors to consider when remodeling the food department. F. Schmid.—p. 26.
*The education of the diabetic patient. A. W. Sprague and M. A. Foley.—p. 41.



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Vol. 50, August 1940

*Federal meat grading service available to hospitals. W. O. Fraser.—p. 45.
*Spices in hospital dietetics. A. Vanderbilt.—p. 46.

MODERNIZATION. In modernizing the food department of a hospital, Mr. Schmid, director, Engineering Department, Albert Pick Co., Chicago, discusses the policy, personnel, organization, method, and equipment of a hospital which would materially affect the changes made. Comprehensive recommendations to be supported with facts and figures are outlined for presentation to boards of directors accompanied by a request for appropriations of money needed to carry out plans.

EDUCATION OF THE DIABETIC PATIENT. The procedure followed in the education of the diabetic patient at the Mayo Clinic deals primarily with the individual patient and endeavors to teach him to live a happy, normal, and useful life. Five lectures weekly with motion picture illustrations, actual instructions in the technic of injection of insulin by the physician, and academic instruction by the dietitian play an important part in the educational procedure.

MEAT GRADING SERVICE. Through use of the federal meat grading service, purchasing agents of public institutions can obtain the grade of meat desired. Factors which determine the grades of carcass beef and wholesale cuts are discussed and a description of the various grades presented.

SPICES IN HOSPITAL DIETETICS. A discussion of spices and their use and value in hospital menu planning to provide "appetite appeal" is presented with recipes furnished by the American Spice Trade Association.

Hospitals

Vol. 14, August 1940

*The dietitian—her important contribution to hospital service. A. H. Perkins.—p. 49.

Vol. 14, September 1940

*Modern trends in hospital planning and equipment. W. H. Walsh.—p. 79.
*An excellent opportunity for dietary education. M. L. Smull.—p. 112.

DIETITIAN. A hospital dietitian is responsible for spending about one-fourth of the hospital budget. She needs to be a prudent spender, a master salesman, an educator, and must value research to be successful.

HOSPITAL EQUIPMENT. Third in a series of articles in which fountain and lunch counter services are advocated in employee dining rooms to prevent dispute over adjustment in wages for maintenance caused by various wage and hour laws.

DIETARY EDUCATION. Dietary education of maternity patients is facilitated by the use of outlines depicting essentials of nutrition; lists of foods to be included in the daily diet; and a menu skeleton to help each patient plan her own daily menu.

Hotel Management

Vol. 38, August 1940

*1940 survey of small hotels. J. O. Dahl—p. 14.

HOTEL SURVEY. Small hotels are the backbone of hotel business and show wide margins of profit. The color schemes, furniture, heating, piping, electricity, staff, food costs and other details of management pertinent to control of profit as found in the Wahpeton Hotel in North Dakota are described in detail.

Hotel Monthly

Vol. 48, August 1940

*Edible by-products of the carcass.—p. 37.
*Sanitary dishwashing.—p. 40.
*Sandwich fillers and spreads.—p. 41.
*Building menus to sell food. A Shircliffe.—p. 44.
*Juices win big place on American menus.—p. 52.
*The economy of frozen foods.—p. 58.

ECONOMICAL ENTRÉES. All edible by-products of the cow, ox, calf, lamb, sheep and pig carcass are discussed as suggestions for varying menus as well as for controlling food costs by the restaurant manager. The author tells how to choose and judge these by-products, and gives brief directions for their preparation and combination with other foods.

SANITARY DISHWASHING. Strict sanitary regulations imposed at the New York World's Fair point the way to widespread improvement and new efficiency in dishwashing operations. Op-

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* **"PEPTIC ULCER**—The Effect of High Protein Diet on the Behavior of the Disease" by Windwer and Matzner, Am. Jl. Dig. Dis. 5:743, 1939.

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timal temperatures and procedures to obtain proper sterilization are given, and have been found to increase the capacity of the dishwashing department by 100% in some places.

SANDWICH FILLERS. New and delicious fillers have wrought a big change in the plebian sandwich since the days of its origin. Suggestions for improvement in preparation are given, in addition to several recipes for popular combinations such as salmon salad, egg salad, and toasted cheese and bacon. Eight excellent illustrations should prove helpful in devising attractive plate arrangements and garnishes.

BUILDING MENUS. In a comprehensive discussion of the arrangement of foods on the breakfast menu, the author stresses the importance of planning and simplicity for easy reading. Definite rules for the order of captions and listings should govern the construction of the selective menu. An ideal à la carte setup, examples of various breakfast styles, and photographs of real menus illustrate the author's summary.

FRUIT JUICES. "Americans are drinking fruits and vegetables that they used to eat," states Professor Marshall of Michigan State College. Tomato juice, grapefruit juice and pineapple juice maintain the lead in the phenomenal 35-fold increase in the consumption of fruit and vegetable juices within the last 10 years. The author describes the "flash sterilization" process for apples which produces an appealing and popular new juice.

FROZEN FOODS. "The quality, convenience of handling and economy" of frozen foods are largely responsible for doubling the volume of frozen foods in the last year. A table giving the percentage of waste eliminated on various items shows 70% eliminated in frozen cauliflower. General recommendations for the handling of frozen fruits and vegetables should prove helpful.

Journal of Home Economics

Vol. 32, September 1940

*Research to increase the use of cotton. R. O'Brien.—p. 443.
*If you want to be a better broadcaster. R. Van Deman.—p. 460
*Maintaining good nutrition in a family group. B. Bisbey.—p. 461.
The zoo hotel. F. G. Orr.—p. 463.

COTTON RESEARCH. The Bureau of Home Economics of the U. S. Dept. of Agriculture has taken definite steps to increase the use and consumption of cotton. Cotton is being tested in laboratories at every stage of its production, from the raw materials through the finished product. Tensile strength, color fastness, physical and chemical deterioration, new finishes and uses are a part of the investigation program to meet the competition of synthetic fibers, and to increase the outlets in our domestic markets and improve economic conditions in the South.

BETTER BROADCASTERS. Columbia Network program planners are planning clinics and round table discussions in May 1941, to encourage better broadcasts. The professional radio networks are extremely open-minded to home economics and are eager to develop good home economics programs that will interest homemakers who are the chief daytime listeners. They feel that men as well as women should enter the discussion of home problems.

FAMILY NUTRITION. Good nutrition points the way to buoyant health, physical efficiency and long life, but due to food habits, family customs, lack of knowledge of nutrition, lack of money, and lack of wise planning, many family diets are inadequate. The duty of the home economist in a community is to teach the homemaker the great importance of good nutrition. Intelligent choice of foods including all essential constituents will decrease doctor bills and increase the amounts paid to the butcher, grocer, and milkman.

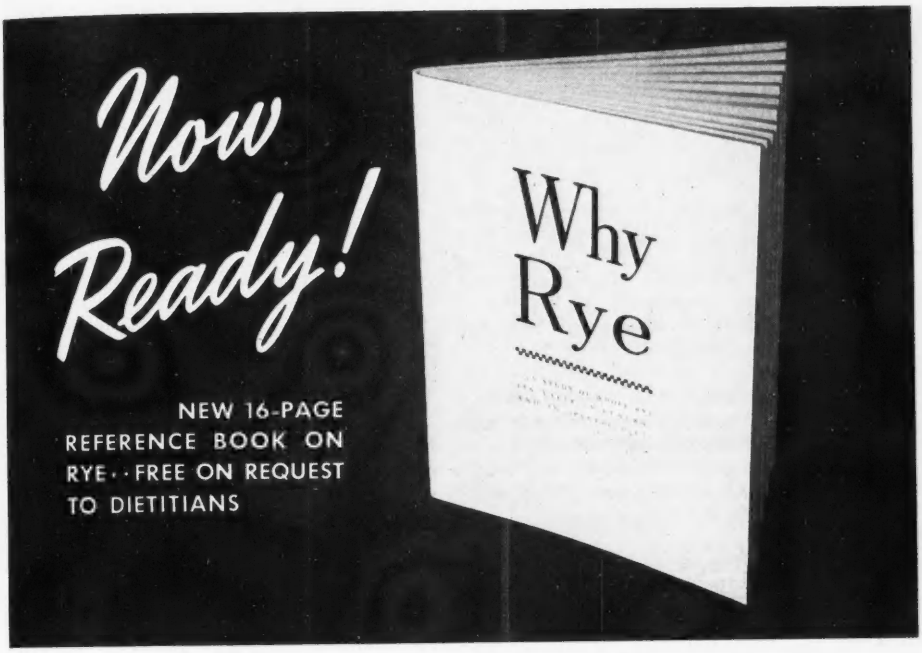
Modern Hospital

Vol. 55, August 1940

*Flavor with favors. H. Nelson and J. Galloway.—p. 88.
Food cost tables -vegetables. G. S. Saunders.—p. 90.
*Facts on fats and oils. S. Kay.—p. 94.

Vol. 55, September 1940

*Safe dishwashing technics. W. D. Tiedeman.—p. 98.
*Food service at Gloucester House. A. E. Morrison.—p. 99.
*Fresh grapefruit on the menu. M. V. Krause.—p. 102.



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FLAVOR WITH FAVORS. Interesting and delightful suggestions for personality favors appropriate for every holiday in the year, to brighten the tray and please the patient, are offered.

FATS AND OILS. A discussion of the kinds of fats and oils, their preparation, and properties which affect their use in food preparation, is presented. Information on cake shortenings, and oils used in salad dressings and deep fat frying, includes a time and temperature chart for frying various foods.

DISHWASHING TECHNICS. Results of studies of dishwashing methods and disinfecting processes stressing qualities of a good detergent, maintenance of temperature at relatively low cost, necessity for proper equipment, and prescribed procedures for handling dishes.

FOOD SERVICE. The organization of the food service department in catering to private and semi-private patients is explained with detailed description of menu planning, visiting patients, ordering of food, and waste control.

FRESH GRAPEFRUIT ON MENU. Results of a study at the New York Hospital, showing analyses of patients' attitudes towards fresh grapefruit and how it may be used as a valuable, comparatively low-cost source of vitamin C in giving variety to menu.

Nation's Schools

Vol. 26, September 1940

*Color in the cafeteria. M. L. Malcolm.—p. 78.
*Food cost tables—vegetables. G. S. Saunders.—p. 80.
*Soliciting the school lunch. M. E. Sullivan.—p. 82.
*Pittsburgh introduces metal lunchroom stool.—p. 82.

COLOR IN CAFETERIA. Central High School, Syracuse, New York, has had interest and color added to its cafeteria by having the students study, design, and paint murals on the walls between the windows. The murals depict scenes of historical interest and significance in the community.

FOOD COST TABLES. The tables give a comparison of the cost per serving of canned, fresh, and frosted asparagus. The purchasing costs and sizes of the units for the different types are given.

SCHOOL LUNCH. In Waterbury, Vermont, the citizens of the town are asked to donate food for the children who eat in the high school cafeteria. Fruit jars were given out to be used for summer canning. The students are able to eat at the cost of one cent a day.

LUNCHROOM STOOLS. A new type of metal lunchroom stool is being used in the Pittsburgh school system. A complete diagram showing all parts of the stool accompanies the article. The use of these stools has caused less noise in the dining room, and less repair has been necessary.

Practical Home Economics

Vol. 18, September 1940

*Milk Smoothees. B. Covalt.—p. 245.
*Annual listing of educational material.—p. 249.

MILK BEVERAGES. Nutritious, inexpensive and appealing milk drinks called "Fruit Smoothees," have been recently developed in a student cafeteria project. The preparation and serving of the combination fruit and milk drink provides practical experience for high school students in computing costs, testing recipes and using the new electric blenders. Recipes given by the author could be used to advantage at any soda fountain, tea-room or school cafeteria.

EDUCATIONAL MATERIAL. An extensive listing of educational material is given under each of the fields of foods and beverages, clothing and textiles, home furnishings and equipment. Full directions for obtaining material are included. Teachers and others interested in these branches of home economics should find such references helpful and stimulating.

Restaurant Management

Vol. 47, August 1940

*Introducing—Toddle House secrets of success.—p. 14.
*15 Nicollet ideas.—p. 26.
*Service for factory workers.—p. 33.
*Approximate shipping season of fresh fruits by state of origin.—p. 34.

The Choice OF Expert Chefs

Reco 4-SPEED MIXER

Your interest in the new Reco Mixer, at the recent Dietitians' convention exhibit, is appreciated. And Reco has become the center of attraction with dietitians and expert chefs, everywhere. The outstanding advantages in the Reco are:

1. 4 SPEEDS
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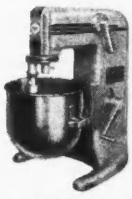
These features assure finer, smoother results, 10% more volume, 25% faster action. See the Reco at your supply dealers or send for bulletin.



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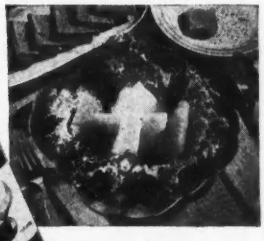

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Avoid monotony . . . use these six rich fruity flavors to vary your menus:

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TODDLE HOUSE SECRETS. The success of the popular and distinctive chain of Toddle House sandwich shops illustrates the wisdom of complete standardization of service and equipment The present rate of expansion of these inexpensively operated restaurants is 30 new units a year, all of which are completely uniform inside and out. Short menus, owner-managers, close supervision and careful selection of site are but a few of the policies discussed.

15 NICOLLET IDEAS. Fifteen pictures illustrate a variety of profitable ideas and innovations from the Nicollet Hotel in Minneapolis. These ideas were the solution to many problems of cost and upkeep, space shortage, and simplification of work for employees.

SERVICE FOR FACTORY WORKERS. The lunchroom of the Jantzen Knitting Mills, Portland, Oregon, illustrates the serving of a large number of persons with a minimum of space and equipment and at low cost. The menu is short, its hot dishes, soups, salads and beverages designed to supplement workers' lunches from home. Electric units, speedy service, and other economy measures discussed are responsible for the monthly net profit of $120 for 21 working days.

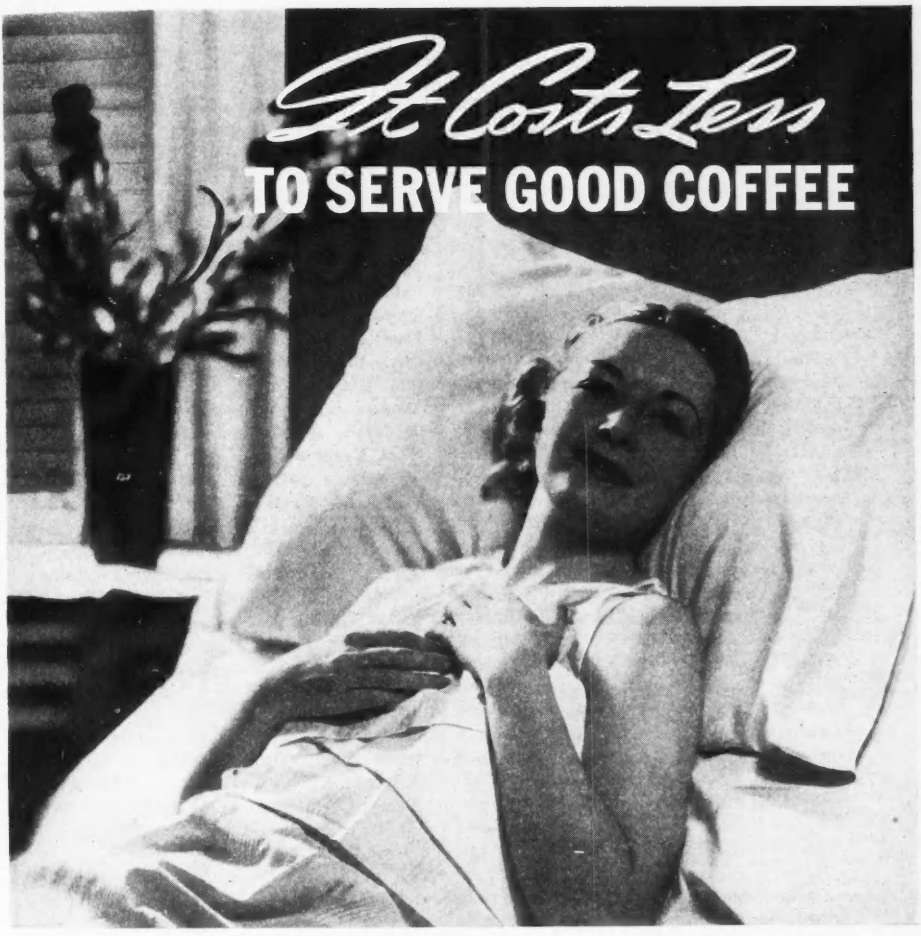
SHIPPING SEASONS FOR FRUIT. A self-explanatory chart gives the approximate shipping seasons for the 14 most used fresh fruits according to 44 states of origin. This should be a great aid in intelligent large quantity purchasing.

✡ ✡ ✡

Food and the War

THE MAINTENANCE of the food supply of the army and of the civilian population of the country in a time of emergency is as important a question as any of the questions which may confront our leaders in times of rapid action and stirring events. . . . The fundamental importance of good nutrition not only for those engaged in military services but for the population as a whole as the source of military units needs no argument in its behalf. What is needed is suitable coordination in Washington of all the various bodies that will be concerned with the nutrition of the nation. Such coordination can be brought about properly only by adequate representation of medicine, which includes scientific nutrition, in the Advisory Commission on National Defense.—*Editorial, J. A. M. A., 115: 536, 1940.*

To be strong a people must be well-nourished. Proper food for mothers and children depends upon factors such as agricultural production and distribution, maintenance of family income, and education in nutrition.—*Declarations of the National Citizens Committee of the White House Conference on Children in a Democracy, June 17, 1940, Supplement to The Child, Children's Bureau, U. S. Department of Labor, July, 1940.*



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And that's particularly true of Continental Coffee because it is a blend of extra-strength . . . extra-richness . . . and full satisfying flavor. It relieves nervous strain, gives a lift to fatigued minds and tired bodies. Yet with all its exceptional deliciousness and full-flavored satisfaction, Continental Coffee is more economical to serve . . . *it actually costs less per cup!*

So serve Continental Coffee . . . the balanced blend especially prepared for hospital use . . . and save by its economy.

We also design and build the finest coffee equipment . . . both urns and glass . . . to brew the best coffee at the lowest price per cup. Write for details.

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NEWS NOTES

American Chemical Society. The Chicago section will hold a National Chemical Exposition at the Stevens Hotel, Chicago, December 11–15. Topics of interest to dietitians are: "Service of Chemistry to Human Nutrition", C. A. Elvehjem, professor of agricultural chemistry, University of Wisconsin; and "Service of Chemistry to Agriculture", H. G. Knight, chief of Bureau of Agricultural and Engineering Chemistry, Department of Agriculture, Washington, D. C.

The Conference of Food Service Directors, planned for the benefit of food service directors in school lunchrooms, college dormitories, industrial cafeterias and institutions, is being held at the Statler Hotel, Detroit, November 7–9. Activities for the first day of the conference include the following: a morning trip to Michigan State College and inspection of the women's and men's dormitories, college laundry and public cafeteria; a luncheon address by John C. Davis, Department of Psychology, Michigan State College; followed by a demonstration on meat cutting by Dr. George A. Brown, Department of Animal Husbandry. At 3.30 p.m. hostesses from the Division of Home Economics are presiding at an informal tea. An alternate program for the day consists of a trip to the famous Dearborn Inn at 2:00 p.m. An informal reception in the evening in the ballroom of the hotel is included, with the Michigan Restaurant and Caterers Association and Home Economics Women in Business as hosts and hostesses.

The program for November 8 includes trips to school cafeterias, industrial and commercial food service centers in Detroit. In the afternoon reports on conference studies are being presented with Edna Gilbert, the Rayen School, Youngstown, Ohio, as director. Subjects considered and presiding officers are: School Lunchroom Session, Mary Hemmersbaugh, supervisor of school lunchrooms, Cleveland, and Natalie Betts, director of cafeterias, Lakewood, Ohio; College and Residence Halls, Alice Burgoin, Department of Institution Management, Cornell University. Conference studies include: "Accounting and Finance", chairman, Neva Radell, Teachers College, Columbia University; "Serving Counter Specifications", chairman, Mary de Garmo Bryan, Ph.D., Teachers College, Columbia University; "Comparative Study of Lunchroom Personnel Procedures", chairman, Mary M. Carothers, Department of Personnel, Board of Education, Detroit; "Increasing Recipes from Units of Fifty to Larger Amounts", chairman, Bertha Nettleton, General Foods Corporation; "Study on Industrial Cafeterias", chairman, Mary Ballard, cafeteria director, Federal Land Bank, Springfield, Massachusetts; "Residence Hall Food Service Study", chairman, Quindara Oliver Dodge, Women's Educational and Industrial Union, Boston; and "Questions and Answers on Detroit Lunchroom Organization", by Lawson Wiles, Winning S. Pendergast and H. M. Southworth.

Constance C. Hart, general chairman of the Conference, Rochester, New York, presides at the annual banquet, with Winning S. Pendergast, supervisor of school lunchrooms, Detroit, as toastmistress. Greetings are being extended by Dr. Frank Cody, superintendent of schools, Detroit; Mary I. Barber, President of the American Dietetic Association, Battle Creek, Michigan; Gladys Branegan, president of the American Home Economics Association, Montana State College; and Mr. Lawson Wiles, director of school lunchrooms, Detroit. Dr. Arthur Smith, Department of Physiological Chemistry, Wayne University, is speaking on "Recent Contributions to the Field of Nutrition and Their Practical Implications."

Round table breakfast discussions and chairmen on Saturday morning include: "College and Residence Halls", Phyllis Sprague, Institution Administration, Pennsylvania State College; "Private Schools"; "Teacher-Managers"; "Rural Schools"; "Lunchrooms over 1000", Helen Hobson, Collingwood High School, Cleveland; "Lunchrooms under 1000"; "Lunchroom Directors and Supervisors", Mary Farnam, director of school lunchrooms, Cleveland Heights; and "Industrial Cafeterias", Mary Ballard.

The general session has as presiding officer, Quindara Oliver Dodge, and the following program: "The Control of Bacteria in the Preparation and Serving of Food", Dr. Walter L. Mallmann, professor of sanitary bacteriology, Michigan State College; and "What's New in

When appetites are UNDER PAR

Maltex Cereal combines a flavor that most children like, with definite nutritional advantages. This cereal is made from toasted cracked wheat mixed with granules made from wheat flour and barley [malt flour—a combination which provides approximately 4 times the food value found in the ordinary flaked or dry cereal. For trial package and teaching material, write:

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Vitamin B_1	70 Int. Units.
Calories	115

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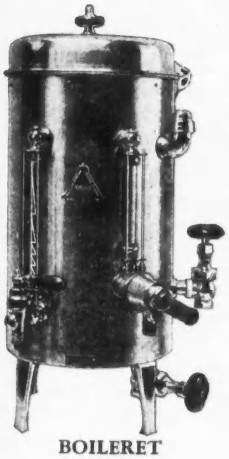

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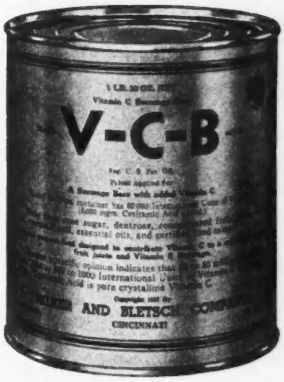

HIT of the CONVENTION!

Outstanding among the products displayed at the national convention of the American Dietetic Association, Hotel Pennsylvania, New York City, October 20 24, was V-C-B, the modern special-purpose food designed to contribute known quantities of Vitamin C to the daily diet at low unit cost!

Only the highest praise of many State Institutions was heard for V-C-B's economy, quality and dependability. V-C-B's low cost of only one and 6/10ths cents per 50 mgm. of Vitamin C effects a considerable saving over administering Vitamin C in any other form, including canned or fresh juices.

Dissolved in water according to directions, V-C-B produces a pleasant fruity beverage containing approximately 1000 International Units of Vitamin C and 50 calories per 4-oz. liquid portion—the approximate equivalent of fresh orange juice in both caloric value and Vitamin C potency.

V-C-B is also used to increase the Vitamin C content of all fruit juices, and mixed with milk, ginger ale, or charged water as a refreshing beverage in Liquid Diets, Restricted Diets, High Carbohydrate Diets and Forcing Fluids.

Because of the convenience, dependability and economy of V-C-B, the Byrd Expedition took no other source of Vitamin C to Antarctica. For the same reasons many State Institutions have adopted V-C-B as a standard for administering Vitamin C.

Many institutions are now saving thousands of dollars yearly with V-C-B. A similar saving can be brought about in your institution. Send for additional details and a 3½-oz. sample can of V-C-B (makes one quart of Vitamin C Beverage) free of charge, NOW!

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Kitchen Equipment", Mr. W. L. Carey, president, Stearness Company.

The Detroit Home Economics Association and Detroit Lunchroom Managers Association are hostesses for the Conference Luncheon on Saturday, at which Constance Hart presides and Dr. Mary de Garmo Bryan acts as toastmistress. Greetings are being extended by Mrs. Laura Osborn, president, Detroit Board of Education; Mrs. Jean Tripp, president, Detroit Dietetic Association; Mrs. Dora Johnston, president, Detroit Home Economics Association; and Mrs. Hazel Goss, president, Detroit School Lunchroom Managers Association. Lelia MacQuire, Merrill Palmer School, is addressing the meeting on "Are We Meeting the Child's Needs?" Mary Faulkner, supervisor of home economics, Board of Education, Baltimore, is presiding at the afternoon session, and Mrs. Bessie Brooks West, Department of Institution Management, Kansas State College, is presenting a food demonstration.

Educational exhibits include the rural lunch, the use of surplus commodities in school lunches, food fads, recent advances in nutrition, records used in Detroit school lunchrooms, and the student training course.

A New Service of the Army Medical Library, Washington, D. C. The Army Medical Library has available a booklet of abbreviated titles of more than 4000 medical periodicals which are currently received by the library. In order to make the tremendous resources of this library available to the many research workers residing far distant from Washington, a "Medicofilm Service" has been established. By a system of microfilm copying, complete articles in any of these medical publications, not exceeding 30 pages in length, may be obtained for 30 cents and 10 cents for each additional 10 pages or fraction thereof. This JOURNAL is included in the Army Medical Library. Readers wishing to obtain copies of any articles may do so on application to the Medicofilm Service of the Army Medical Library.

New Data on School Lunches. Managers of lunchroom services and directors of school lunch programs will welcome a recent publication prepared by the Surplus Marketing Administration and the Bureau of Home Economics of the U. S. Department of Agriculture, entitled *School Lunches Using Farm Surpluses*. A limited supply of these is available free on request to the U. S. Department of Agriculture, Washington, D. C., or copies may be obtained from the Superintendent of Documents, Washington, D. C. at 10 cents each. The bulletin has been prepared by Rowena Schmidt Carpenter and Fanny Walker Yeatman, Foods and Nutrition Division, Bureau of Home Economics, assisted by Mrs. Ruth Cotting, MacFarland Junior High School, Washington, D. C. The contents give simple directions for planning the school lunch, menu patterns with suggestions for type of equipment, methods of preparation, and a number of excellent recipes in amounts for 12, 25 or 50 servings. Also available is a folder entitled "More Facts about School Lunches" which states how surplus foods may be made available to schools for lunches for needy and undernourished children. This is revised as of September 9, 1940.

Nutrition and Dietetics Workbook. Alberta Dent, associate professor of home economics in charge of nutrition, New Jersey College for Women, New Brunswick, has just published a workbook designed to supplement other reference material and serving as a guide in teaching nutrition at the college level. The book is circla bound and may be obtained for $2.25 plus postage upon application to Miss Dent.

Nutrition in Chile. Dr. Esteban Kemény, *Servicios de Beneficencia*, Santiago, has recently written to Dr. Mary de Garmo Bryan stating that he has organized a school for dietitians, the second one in the South American continent. About two years ago Dr. Kemény was asked by the Chilean government to reorganize the food service in hospitals of the country. He also organized the first Latin-American Hospital Congress held in Santiago January 7–14, 1940.

Nurses' Defense Program. The Nursing Information Bureau, 50 West 50th St., New York, through Mary M. Roberts, director, announces in *Professional Nursing* the creation of a Nursing Council on National Defense in answer to the call for more nurses by the Federal Government Nursing Service and by reason of the expansion of medical programs in the development of military and naval programs.

"Save" a few cents with cheap dishwashing compounds—and up go your dishwashing costs where they're *greatest*—in labor, breakage, water, towelling, laundry! For cheap compounds are bound to turn out filmy-looking glasses, streaked dishes, spotty silver—which mean costly hand-towelling. The few cents per pound such compounds "save" are quickly lost in extra dollars spent for increased dishwashing overhead!

Time and again, in actual test cases, thousands of dollars have been saved in dishwashing department overhead by a switch to Super Soilax and Super Soilax Service. They have eliminated the extra work made necessary to get really clean dishes with cheaper compounds. They have done away with towelling, hand-scouring, re-washing. They have prevented scale, grease, and odors in dishwashing machines . . . stopped clogging, reduced "cleanouts".

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FOR MECHANICAL DISHWASHING OF CHINA, GLASS, SILVER

Federal Security Administration announced on September 10 postponement of the effective date of the recently issued definition and standard of identity for evaporated milk to March 1, 1941. Evaporated milk produced under the new standard differs only slightly from that heretofore produced. The new standard requires 7.9 per cent milk fat, whereas 7.8 per cent had been previously specified.

The Federal Security Agency has promulgated definitions and standards of identity for preserves, jellies, and fruit butters which are published in the Federal *Register*, available from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 10 cents each.

The Agency has also announced proposed regulations under the Federal Food, Drug, and Cosmetic Act relating to foods for special dietary uses designed to give effect to the provisions of section 403 (j). This declares a food misbranded if it purports to be or is represented as a food for special dietary use and its label does not bear the information required concerning vitamin, mineral, and other dietary properties as may be necessary fully to inform purchasers as to its value for such uses.

Food and Drug Administration. The monthly summary of regulatory actions for August lists seizures of various lots of foods, drugs, medicinal products, devices, and cosmetics, found to be in violation of the Food, Drug, and Cosmetic Act. Decomposition in whole or in part accounted for the seizure of butter on charges of decomposition or filth because of the use of unfit cream in its manufacture; cream; frozen fish fillets, some of which were found to be parasite infested; and 71 cases of canned mushrooms. Insect-infestation and other forms of contamination accounted for seizures of flour, filthy corn meal, candy, Limburger cheese, raisins, blueberries and huckleberries. Additional seizures included evaporated apples, sliced scallops contaminated with fish liver oil, and canned orange juice in which chemical decomposition had taken place due to the action of the juice on the metal of the container. Violations of an economic nature included low-fat butter found to be short weight; low-fat oleomargarin containing excessive moisture; olive oil adulterated with cottonseed oil; canned tomatoes and canned peas of substandard quality but not so labeled; canned oysters containing particles of shell; vinegar containing less than the 4 per cent required acidity; and canned so-called grape punch found to be of short volume and containing artificial color and flavor not indicated on the label as required; also canned beans with pork and tomato sauce, containing excessive liquid, no tomato sauce and little or no pork; and wrapped candy bars, the labels of which failed to state the common or usual name of each ingredient, or the name and place of business of the manufacturer.

Royna J. Wilcox. The members of the Northeastern Pennsylvania Dietetic Association record the death of one of their most faithful and unselfish members, Royna J. Wilcox, on August 8, 1940, at Scranton.

A keen sense of personal loss in her untimely death is felt by every member. In the past two years, she had served as president and endeared herself to everyone by her unselfishness and devotion to her work. Not only the local members but state members with whom she worked on numerous committees and the national Association of which she has been a member since 1927, will miss her.

Chicago Dietetic Association. Madge Meyers has resigned from Billings Hospital to accept a position at Charity Hospital, New Orleans. Her office as vice-president of the Chicago Dietetic Association has been filled by Mary Burnham of Illinois Central Hospital.

The dates of the fiscal year have been changed to coincide with the American Dietetic Association's fiscal year. Present officers will hold office until September 1941.

At the September meeting Dr. Broda O. Barnes, Illinois Research Hospital, spoke on the "Use of Vitamin B in a Free Dispensary."

Connecticut Dietetic Association opened the fall season with a dinner meeting on October 2, at which Mrs. Chase Going Woodhouse, managing director of the Institute of Women's Professional Relations, Connecticut College, New London, spoke on "The Dietitian—Her Social Contributions."

Marjorie Burr, 1939–40 president of the C. D. A., has accepted a position in Tucson, Arizona. A farewell party was held at the W. W. Winchester Hospital, where the Executive

"Look," said Elsie, "you're turning green!"

"YES," said Abigail, the cow on the other side of the fence, "I *am* turning green. What of it?"

"Well—er—" stammered Elsie, the Borden cow. "Isn't it a bit unusual?"

"Not at all," Abigail replied. "I often turn green when I'm jealous. It's what people call turning green with envy."

"What are you envious of?" inquired Elsie.

"You," said Abigail. "I'm envious of the clean, tidy barn you live in. I'm jealous of the way that young veterinarian checks up on your health. And I do wish someone was as careful about the purity of *my* milk as all those Borden folks are of *yours*."

"They might be," said Elsie rather tactlessly, "if your milk went into as many important products as mine. Only the cleanest, purest milk can make things as fine and wholesome as Borden's Ice Cream, Evaporated Milk, Malted Milk, Biolac—just to name a few."

Borden experts, scientists, and laboratory workers exercise an eternal vigilance over the quality and purity of all Borden Products, from the farm to the placing of the product in the consumer's hands. That is one reason why "Borden" is such a reassuring name on *any* milk product you may prescribe.

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Committee of the C. D. A. enjoyed a steak picnic dinner.

Catherine Campana, nutritionist, is with the Family Service Society and the Diocesan Bureau of Social Service in Hartford.

Margaret Connor, St. Joseph's College, and Alice Manek, Norwalk Hospital, attended Columbia University summer school.

A son was born to Mr. and Mrs. Eugene Langan on August 10.

Naomi Gill of St. Joseph's Hospital was married on June 22 to Mr. John Boyle. Mr. and Mrs. Boyle are residing in Hartford.

Detroit Dietetic Association. The September meeting was held at the Alexander Blain Hospital, through the courtesy of Dr. Blain. Officers and committee chairmen for 1940 41 are as follows: president, Mrs. Jean Chamberlin Tripp, Detroit Board of Health; vice-president, Mrs. Marie Graham Diton, Receiving Hospital; secretary, Mrs. Gertrude Stone Gall, Receiving Hospital; treasurer, Mrs. Elizabeth Marsh Brandt, Alexander Blain Hospital; Administration, Margaret O'Connell, Harper Hospital; Community Relations and Education, Regna Anderson, Department of Public Welfare; Diet Therapy, Gertrude Henry, Harper Hospital Out-Patient Department; Professional Education, Evelyn Foster, Henry Ford Hospital; Program, Dr. Lillian Meyer, Wayne University; Membership, Dorothy Hacker, Visiting Nurses Association; Library, Helen Tweedale, Board of Education; Constitution Revisions, Mrs. Jean Hughes Dunnigan, Board of Education; Placement Committee, Doris Phillips, Woman's Hospital.

Dorothy Hacker presented a skit entitled "Nutrition Integrated in a Public Health Nursing Agency" at a joint meeting of the Public Health and Nutrition Sections at the sixty-ninth annual meeting of the American Public Health Association, Detroit, October 8–11.

Sophia Halsted, formerly director of nutrition, Detroit Board of Health, was married in June to Mr. Earl B. Shaw of Worcester, Massachusetts.

Evelyn Foster, former staff member, is now chief dietitian at Henry Ford Hospital.

Alice LeTourneau, August graduate of Henry Ford Hospital, was married September 14 in Battle Creek to Mr. Howard Hayden. They will reside in Detroit upon their return from a South American cruise.

Marian Smith, graduate of North Dakota Agricultural College, Fargo, is therapeutic dietitian at Henry Ford Hospital, where she has just completed her training.

Mrs. Helen Benson Banach has resigned her position as chief dietitian at St. Mary's Hospital and will live in Battle Creek. Mrs. Banach graduated from Wittenberg College, Springfield, Ohio, and trained at University Hospital, Ann Arbor, where she was pediatric dietitian for six years before coming to Detroit. Gladys Enke, graduate of the University of Minnesota, formerly ward service dietitian at University Hospital, has accepted the position of chief dietitian at St. Mary's Hospital.

Mildred Kurek, 1940 graduate, is therapeutic dietitian at St. Mary's Hospital.

Edna Byrnes, graduate of St. Mary's Hospital, has accepted a position at St. Mary's Hospital, Rochester, New York.

Gertrude Stone, therapeutic dietitian at Receiving Hospital, was married on May 4 to Mr. John David Gall.

Margaret Duchene, graduate of St. Mary's Hospital, is administrative dietitian in the Nurses Home of Providence Hospital, Detroit.

Rita Norris, graduate of St. Mary's Hospital, is therapeutic dietitian at St. Agnes Hospital, Baltimore, Maryland.

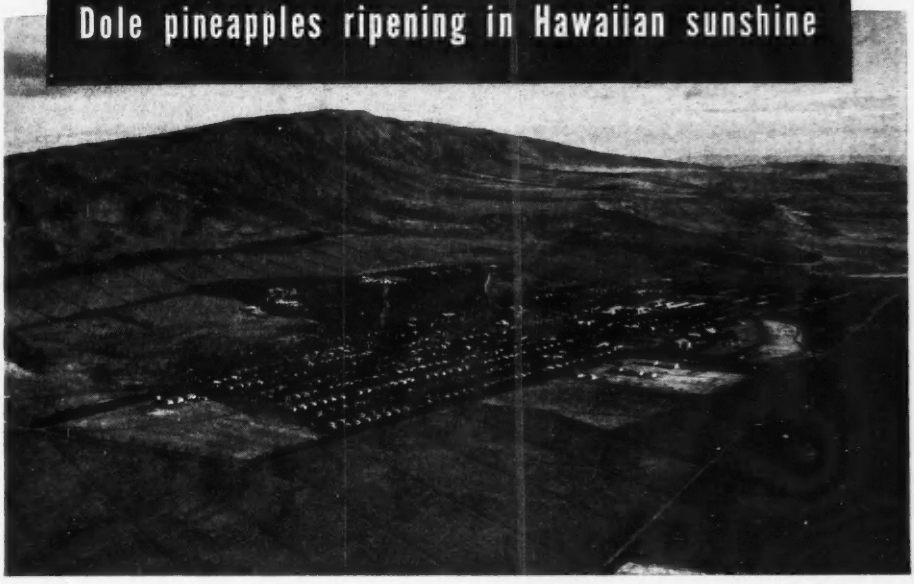
Lenore Lucking, graduate of St. Mary's Hospital, accepted a position at Providence Hospital, Washington, D. C.

Gertrude Jackson, graduate of St. Mary's Hospital, resigned her position at the Northern Michigan Tuberculosis Sanatorium, Gaylord, Michigan, to replace Marguerite Anacker as administrative dietitian at St. Mary's Hospital.

Henry Ford Hospital accepted the following student dietitians in September for one year's training: Claire Putz, North Dakota Agricultural College; Annette LaBerge, University of Minnesota; Jean Kuentzel, DePauw University; Bettie Siewert, University of Wisconsin; Jaehana Smith, Mount Mary College, Milwaukee; Mary Dunlap, University of California; Carolyn Barker, Purdue University; Margaret Graner, Milwaukee-Downer; Vera Stribe, State University of Iowa; Ruth Gott, Western Reserve University.

"AS FAR AS THE EYE CAN REACH"

Dole pineapples ripening in Hawaiian sunshine



In Hawaii, nature provides the sun and rain, and warm, deep soil pineapple plants must have. But, as you so well know, nature often needs help. On Dole plantations soil specialists and plant physiologists augment the ideal growing conditions. The result is healthy, luscious fruit—the finest pineapples in the world.

Dole pineapple pickers are specialists, too. They know when pineapples have reached the perfect degree of ripeness. Then—and only then—are Dole pineapples picked and sent to the Dole Cannery. There the juice is extracted and canned *immediately* by the exclusive Dole Fast-Seal Vacuum Packing Process.

All this exacting care results in a juice that never varies in fine flavor and nutritive value. It is unsweetened, high in quickly-available food energy, a good source of vitamins B and C, and contains A. Your patients—as well as you, yourself—will enjoy the refreshment of Dole Pineapple Juice from Hawaii.

(In writing to advertisers, please mention the journal—it helps.)

Gene Marie Runke was married to Mr. Hugh Waterston on May 11 and is living in Lakeville, Michigan.

Martha Rouse, formerly a member of the staff at Harper Hospital, was married on May 29 to William H. Guthrie. They are living in Detroit.

Mary Miller, who was a student and resident dietitian at Harper Hospital before being dietitian at Pontiac General Hospital, has returned to the Harper staff and is now in charge of the South Kitchen unit.

Katharine Sandven, who finished her training at Harper in 1937, has been at Syracuse General Hospital, Syracuse, New York. She recently resigned her position to be married on October 5 and is living in Minneapolis.

Jeannette Moore, former Harper student, and nutritionist with the Detroit Public Health, was married to Mr. Terry Oates and is continuing her work.

Vera Tiede was married this summer to Mr. John Spalding and is now living in Midland, Michigan. She was formerly at the Veterans Hospital, Waco, Texas.

Mrs. Eric Jacobsen (Mary Elizabeth Grieve) of Providence, Rhode Island, has a new baby girl, Andrea Gilmore, born July 6.

This summer Mrs. Wayne Kilpatrick, formerly Opal Binkley, of Oakland City, Indiana, visited Harper Hospital, where she was previously therapeutic dietitian.

Claire E. Storvick, who is working for her doctor's degree at Cornell University, spent two months this summer at Harper Hospital, doing graduate work in diet therapy.

Lieutenant and Mrs. Frank Sebenaler (Louise Talbot) of Middletown Air Depot, Pennsylvania, have a new son, Alden.

Harper Hospital student dietitians for 1939–40 are now in the following positions: Ardis Hubbs, staff member, and Frances Wilson, resident dietitian, Harper Hospital; Jean Waterston, City Hospital, Cleveland; Lucille Hallet, Warren City Hospital, Warren, Ohio; Betty Martin, Huron Road Hospital, Cleveland; Eva Carlson, Lutheran Deaconess Hospital, Chicago; Paula Beuck, Methodist Hospital, Omaha; Eunice Anderson, Christian R. Holmes Hospital, Cincinnati; Elizabeth Huey, Illinois Central Hospital, Chicago; Ernestine Mangold, Touro Infirmary, New Orleans; Marguerite Mayer, Doctor's Hospital, Washington, D. C.

Harper Hospital student dietitians for 1940–41 are: Marie Pattani, Florida State College for Women; Mern Walsh, University of Minnesota; Winifred Royce and Louise Thomas, Iowa State College; Margaret Standerline, DePauw University; Jean Bower, University of California; Marion Kelly, Montana State College; Margaret Mathes, Purdue University; Ruth McClelland, University of Maine; Helen Mannon, University of Illinois; Edna Schultz, Michigan State College; Margaret Tafel, University of Wisconsin.

Louisiana Dietetic Association. Progress this season has been marked by the addition of several new members, the completion of plans to finance a state meeting and possibly a tri-state meeting during the ensuing year, and ultimately to realize a long-felt desire to have the national convention in New Orleans.

Officers for 1939–40 are: president, Ouida Moore; vice-president, Adelle Corey; and secretary-treasurer, Florence Caswell; nominating committee, Sister Euphemia, Mrs. Elva Kahrs, Ouida Moore, Eleanor Bowdoin, Mary Brakel, and Marie Cincoski.

Section and committee chairmen are as follows: Administration, Mildred Rewerts; Community Education, Bernes Larson; Professional Education, Mary Brakel; Diet Therapy, Lottie Benedick; Program, Bernice Overton; Nominating, Eleanor Bowdoin; Publicity, (vice-president) Miss Corey; Membership, (secretary-treasurer) Miss Caswell; Finance, Polly Lutz, chairman, Mrs. Dorothy Pollack, Eleanor Bowdoin, Adelle Corey.

Mary Brakel has left Charity Hospital to accept a position in Seattle.

Margaret Davenport was married to Dr. T. D. Boaz who completed his internship at Charity Hospital on July 1. They are now located in Birmingham, Alabama.

Adelle Corey has left Touro Infirmary to accept a position as dietary head at the East Louisiana State Hospital, Jackson.

Massachusetts Dietetic Association. The opening session of the association was a combination business meeting and tea, held at the Hotel Vendome salon, Boston, September 17. Visiting dietitians who were attending meetings of the American Hospital Association convention were guests.

NOW! SERVE 3 BISCUITS FOR 1¢

Under new price reductions a 50 lb. drum of ready-to-bake FIXT Biscuit Mix costs only 7¾c per lb. You'll get 25 tender flaky biscuits to a pound of dough—at a cost of less than 1/3c per biscuit, approximately the same as bread or rolls. But what a difference in customer appeal! They'll go for flaky, tasty FIXT Biscuits, so easy to make, with every ingredient except water ready-mixed, and so uniformly delicious.

OTHER FAMOUS FIXT MIXES

Egg Griddle Cake Waffle Biscuit Brownie Cookie Chocolate Fuj Icing Spice Cake Yellow Cake Handy Doughnut White Fuj Icing Buckwheat Griddle Cake Devils Food Pie Crust Bran Muffin Corn Muffin Ginger Cake White Cake Supreme Choc. Pudding Whole Wheat Chocolate Pudding

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WHEAT GERM OIL

Solvent extracted at low temperatures; contains a minimum of 2 Evans units of vitamin E per gram; guaranteed to retain its potency for six months after purchase.

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DEFATTED WHEAT GERM

1. Does not become rancid or deteriorate.
2. Somewhat richer in Vitamin B1 and 15% higher in proteins and minerals than the germ from which it is derived.
3. Fully prepared and ready to eat.

These two outstanding wheat germ products have had four years of acceptance by commercial organizations and laboratory workers.

For complete details and prices write to the

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VULCAN GAS COOKING EQUIPMENT *is designed for hospital needs*

THE VULCAN *SUPER* RADIAL-FIN TOP with new ventilated ring and cover plate speeds up top heating, improves heat distribution, provides larger usable cooking area. New "concentrated flame" 4-ring burner improves combustion, gives hotter center heat, greater overall cooking heat—with no more fuel. Top cooking costs being cut as much as 20%. Available only on Vulcan Ranges.

Here's a Vulcan complete cooking unit particularly suited for a medium-size hospital. On the left is a heavy duty ceramic broiler for broiling and toasting, with oven for au gratin work. Next to it is an automatic deep fat fryer and 4-burner open top range for short-order and off-peak cooking. A Radial-Fin Top Range for bulk cooking and a fry-plate griddle top complete this practical ensemble. Two extra-large 2-compartment ovens (each 26″ wide) fully insulated, with automatic heat control, take care of baking, roasting and pastry demands. Width overall 124-5/8″, depth 35″ or 41½″, height 72″.

This is one of a great number of practical cooking units in the Vulcan catalog. Write for No. JD-11 for Dieticians.

STANDARD GAS EQUIPMENT CORP., 18 E. 41st ST., NEW YORK

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A series of five sheets on the care of the feet for diabetic clinic patients has been developed and completed by Dr. Joseph Rosenthal, Frances Stern, and Helen Finkelstein, in association with physicians of the Boston Dispensary. The Buerger-Allen exercise with photographs and instructions accompanies the sheet on circulation, and is used in other clinics of the Boston Dispensary. The five sheets include: bathing, shoes, stockings, injuries, and circulation. An exhibit placed in the corridors of the Food, Diabetic, and Chiropody Clinics supplements the data on the sheets.

On September 12 the New England Institute for Hospital Administrators visited the Food Clinic, where Dr. Joseph Rosenthal, chief of the Diabetic Clinic, and Miss Stern demonstrated and described in detail the methods used in teaching the diet to the ambulatory patient. An exhibit of foods used by the foreign-born patient showed the various foods used as a basis in teaching the normal and therapeutic diets to the different nationality groups. Refreshments were served and many individual questions were answered. Each visitor was given a folder which contained forms and material used by the physician and the dietitian, and material given to each patient. During the summer Jessie A. Spencer of British Guiana, supervisor of a tuberculosis society, and Dr. Segundis G. Jas, Nutrition Laboratory, University of the Philippines, Manila, observed methods in the Food Clinic. Dr. C. Yamarat, Department of Public Health, Bangkok, Siam, also spent two months in the Food Clinic, studying applied nutrition. Dr. Yamarat participated in the clinic work, interviewing patients and writing diets. As a special study and working with Susan Merrow he investigated the nutritional adequacy of Siamese diets.

Vera Marquis, dietitian in charge of the Eye and Ear Infirmary, Massachusetts General Hospital, has announced her marriage to Mr. James Delaney at Stellarton, Nova Scotia, August 23.

Dorothy Henderson has accepted a position as assistant dietitian in charge of the Baker Memorial diet kitchen, Massachusetts General Hospital.

Marguerite Craig has left the Massachusetts General Hospital and is now at the Truesdale Hospital, Fall River, Massachusetts.

Virginia Bounds, a graduate of the training course at the Massachusetts General Hospital, is now doing special diabetic work at the Philadelphia General Hospital.

Frances Fisher, graduate of the Pittsfield Hospital, assisted at the New England Baptist Hospital during the months of August and September.

Dorothy Bischoff, 1940 graduate of Peter Bent Brigham Hospital, has accepted the position of assistant therapeutic dietitian at the Morristown Memorial Hospital, New Jersey.

Claudia Stallworth, 1940 graduate of Peter Bent Brigham Hospital, is relieving for two months at the Beth Israel Hospital, Boston.

Josephine Hoffman, formerly with the New England Baptist Hospital, has announced her marriage in June to Mr. Cheslea D'Andrea of Boston.

Louise Hatch has accepted a position as dietitian in charge of the Private Pavilion at Cornell Medical Center, New York.

Jane Andrews, graduate of the Beth Israel Hospital, has accepted the position of assistant dietitian at the Children's Hospital.

Frederica L. Beinert of the State Department of Public Health was an instructor at the summer session of Boston University. For the third year, she conducted a course in advanced nutrition.

The Community Health Association of Boston now has a total of ten nutrition workers on its staff. Frances Lennon, a graduate of Iowa State College, and Jean Sunderland, who attended Simmons College, joined the staff this year.

Blanche Dimond, formerly of the Community Health Association, has been appointed home economist with the Massachusetts Department of Public Welfare. This is a new service.

New Jersey Dietetic Association. The Hamilton High School Cafeteria at Trenton, under the direction of Helen Kilpatrick, has started a training course for student dietitians. Miss Kilpatrick hopes to meet the requirements of the A. D. A. The first pupil to take this training is Rebecca Klawuhn of Hood College. The new plan seems to be working out nicely.

On September 6 a number of the members of the N. J. D. A. met at the Morristown Memorial Hospital to bid Sally Mooring farewell and wish her success in her new position

MOLASSES

A valuable dietary asset where EXTRA IRON is needed

NEW FINDINGS SHOW ITS HIGH IRON CONTENT IS OVER 80% AVAILABLE

QUICK SUMMARY

RESULTS: New Orleans molasses, known to be one of the richest food sources of iron, has now been proven to contain iron of from 80% to 97% *availability.*

HOW TESTED: (A) Chemically and biologically[1]. (B) Clinically[2].

SUGGESTED USES: For child feeding where its high calorie value plus iron content make molasses a valuable dietary asset; and to provide extra iron during pregnancy.

AVAILABLE IRON CONTENT: 0.653 mgs. per tablespoonful in Brer Rabbit Molasses—Gold Label grade. 1.078 mgs. per tablespoonful in Brer Rabbit Molasses—Green Label grade.

SUGGESTED AMOUNT: One to three tablespoonfuls daily. This may be taken plain, on bread, cereal, desserts or in milk. Physicians may vary the amount, depending on the iron need, age, condition and tolerance of the individual.

IT IS WELL KNOWN that molasses, with its abundant supply of iron, is one of the most inexpensive food sources of that mineral. It has now been determined conclusively that molasses—unlike many foods—contains iron in a form which is readily assimilated by the body.

To supply up-to-date, exact data on this subject, the makers of Brer Rabbit Molasses cooperated in carrying out chemical, biological and clinical research. A brief summary of results of the chemical and biological tests is reported here.

THE MOLASSES USED IN ALL TESTS WAS BRER RABBIT NEW ORLEANS MOLASSES.

The chemical and biological tests confirm the high iron *content* of Brer Rabbit Molasses; they also show the *availability* of the iron to be over 90% in the Gold Label grade and over 80% in the Green Label grade.

Taste preferences for molasses differ. Brer Rabbit comes in two flavors to meet all requirements. If a dark, full-flavored molasses is desired, specify Green Label Brer Rabbit (Molasses "B" in table). If a light, mild-flavored molasses is wanted, specify Gold Label Brer Rabbit (Molasses "A" in table).

Because of its low cost and palatability, may we suggest that you recommend the use of Brer Rabbit New Orleans Molasses where a higher iron content in the dietary is desirable? Penick & Ford, Ltd., Inc., Manufacturers of Brer Rabbit Molasses, New Orleans, La.

TABLE[1]

	Total iron mg/100 gm	Per cent availability	Available iron mg/100 gm
MOLASSES "A"*	3.2	97	3.1
MOLASSES "B"**	6.0	85	5.1
BEEF LIVER	8.2	70	5.7
OATMEAL	4.8	96	4.6
APRICOTS (*dry*)	4.1	98	4.0
EGGS	3.1	100	3.1
WHEAT	5.0	47	2.4
RAISINS (*Muscat*)	3.0	62	1.9
PARSLEY	3.2	50	1.6
BEEF MUSCLE	3.0	50	1.5
OYSTERS	5.8	22	1.3
CABBAGE	1.8	72	1.3
MUTTON	5.1	24	1.2
LETTUCE	1.5	63	0.9
SPINACH	2.6	20	0.5

*Brer Rabbit—Gold Label **Brer Rabbit—Green Label

1. Am. J. Dig. Dis. Vol. VI, No. 7 (Sept.) pp. 459-62, 1939
2. Clinical research completed. Paper being prepared for publication. Reprints of these papers will be sent physicians and nurses on request.

ACCEPTED AMERICAN MEDICAL ASSN Council on Foods

at the City Memorial Hospital at Winston-Salem, North Carolina. The evening was spent playing bridge, Chinese checkers, and other games.

Greater New York Dietetic Association. At the first meeting of the year, September 23, at the Memorial Hospital, members of the association received a liberal education in the buying of fruits and vegetables and processed foods. Department of Agriculture marketing specialists, E. J. Evans, of the Processed Foods Division, and William C. Heckleman, regional supervisor of Inspection Service of Fresh Fruits and Vegetables, spoke informatively on government inspection services and standards.

Dorothy Stephens of New York Post-Graduate Hospital and president of the association welcomed nearly one hundred members and guests and turned the meeting over to the program chairman, Ina Lindman, director of Home Economics, Fruit Dispatch Co. Brief reports were heard from committee members in charge of activities for the forthcoming A. D. A. convention.

Miss Lindman introduced Mr. Evans, who traced the history of the development of processed food standardization and inspection service by the U. S. Agricultural Marketing Service. Stating that improvements in marketing methods have not kept pace with methods of production, the impetus for promulgation of standards came initially from bankers requiring specific knowledge of quality and value before advancing loans on consignments of food. Bankers, brokers and many institutions now rely on government specifications for canned fruits and vegetables.

Mr. Evans pointed out that dietitians and institution purchasing agents might do well to study and be guided by U. S. grade quality specifications for canned fruits and vegetables. Copies of all standards are available to anyone by writing to the Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C. Sampling and grading services are also available for a small fee to interested consumers or purchasing agents, by writing either to Washington or the New York office of the U. S. Agricultural Marketing Service at 641 Washington Street.

Mr. Heckleman discussed federal specifications and grading services for fresh fruits and vegetables. Dietitians and consumers might well take a tip from Navy, Army, restaurant and veteran organizations which purchase in quantities according to government standards. Dietitians were urged to buy by weight rather than by measure and to insist upon being supplied with the exact quality specified. Most wholesalers are familiar with government buyer specifications and can meet these specification levels. Mr. Heckleman suggested that dietitians subscribe for the Market Service Bulletin issued daily by the U. S. Department of Markets, 641 Washington Street, New York City.

Oklahoma Dietetic Association. Mary Wilkinson and Mrs. Freda Johnson resigned from the Dietary Staff of the University Hospitals of Oklahoma this summer. J. Marie Melgaard, chief dietitian, announces a new staff of assistants as follows: administrative assistant dietitian, Violet A. Rohrer, formerly of Vanderbilt University Hospitals, Nashville; instructor in nutrition, Vera I. Parman, formerly of Oklahoma A. & M. College, Stillwater; assistant in charge of Food Service Unit at Crippled Children's Hospital, Dorothea L. Crockard, and therapeutic assistant dietitian, Martha F. Spradlin, the last two being recent graduates of the University Hospital School of Dietetics.

The graduation banquet and program for the 1940 class of student dietitians at University Hospitals was held August 27. The following students received certificates and pins, and accepted appointments as follows: Helen K. Collins, therapeutic assistant dietitian, Colorado State College, Pueblo; Dorothea L. Crockard, assistant dietitian, University Hospitals; Dorothy M. Dreyer, assistant dietitian, Baylor University Hospital, Dallas; Elizabeth Jones, dietitian, Methodist Episcopal Hospital, Scottsbluff, Nebraska; Patricia Rooney, dietitian, Our Saviours Hospital, Jacksonville, Illinois; Kathryn M. Spetz, assistant dietitian, Good Samaritan Hospital, Portland, Oregon; Martha F. Spradlin, assistant dietitian, University Hospital. Helen E. Kantor at present is at her home, International Falls, Minnesota.

The new class of student dietitians admitted September 1 at the University Hospitals are: Wilma Hawkins, University of Oklahoma; Jean Hondrum, University of Arizona; Flo J. Irwin, University of Tennessee; Ethel Lienhardt

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Electric Meat, Fish and Bone Cutter

The "Jim Vaughan" is gaining increased popularity and favor among leading dietitians. There are many good reasons why this modern piece of equipment is rapidly taking its place in the modern hospital kitchen.

The Saving of Meats. The uniform and controlled cutting of meats, fish and other meat products on "Jim Vaughan" result in equal and, therefore, more portions out of a given amount of meat. Users claim savings of 5 to 20% on their meat bills.

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"Jim Vaughan" Cuts Many Foods. "Jim Vaughan" cuts beef, veal, lamb, pork, fish, bones, or poultry—fresh or roasted, may be split. Besides such meats, "Jim Vaughan" also is extensively used on many other products to cut and divide them into uniform portions.

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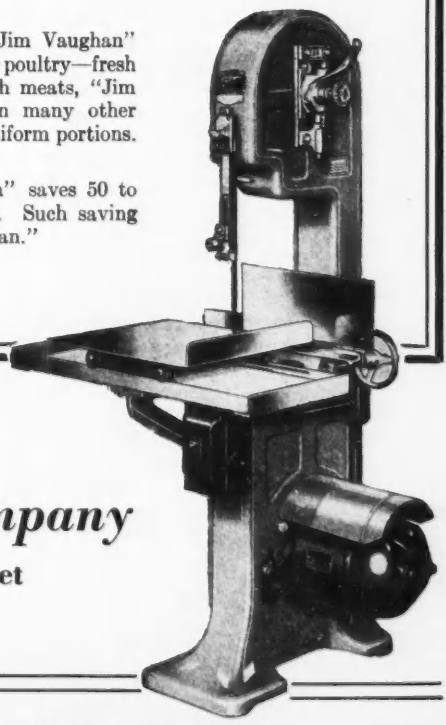

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Kansas State College; and Lois B. Ryan, University of North Dakota.

St. Anthony Hospital, Oklahoma City, held graduation exercises after a formal buffet supper on August 31. Parents and guests of the students were present and a short address was given by Dr. Bert Keltz. Certificates and pins were presented to the graduates. Appointments accepted are as follows: Ella Marie Fikes, Providence Hospital, Kansas City, Kansas; Florence Fritton, Ponca City Hospital, Ponca City, Oklahoma; Phyllis Murphy, St. Francis Hospital, Maryville, Missouri; Marjorie Rose, Lutheran Hospital, Ft. Wayne, Indiana; Helen Trieschmann, St. Margaret's Hospital, Hammond, Indiana; Dian Keith, Tonkawa Preparatory School and Junior College, Tonkawa, Oklahoma.

The 1940 41 class consists of: Marcelline Moran, Marymount College, Salina, Kansas; Lovilah Sheker, Iowa State College, Ames; Mary Frances Ryan, College of St. Teresa, Winona, Minnesota; Patricia Heptig, St. Mary's College, Leavenworth, Kansas; Marie Anne Daube, Seton Hill College, Greensburg, Pennsylvania; Mary Buswell, Mount St. Scholastica College, Atchison, Kansas.

Judy Little, graduate of St. Anthony's Training School, and former dietitian at Tonkawa, was married on May 29 to Mr. Si Gassett. Since September 15, they have been stationed at Ft. Sill where Mr. Gassett is in the engineering department.

Dr. Daisy I. Purdy, head of the Institutional Department at Oklahoma A. & M. College, Stillwater, is taking her Sabbatical leave this year. She and Mrs. Gould of the Oklahoma City Y. W. C. A. are going to operate the El Merenbero Tea Room and Gift Shop in Tucson, Arizona.

In its first class of student dietitians, Oklahoma A. & M. College graduated four. Elouise Tschantz accepted the appointment as assistant dietitian of the College Commons, University of Kansas; Margaret Hall, as assistant dietitian, College Cafeteria, Kansas City University; Margaret Whetsel and Martha Peyton were the two other graduates.

Philadelphia Dietetic Association. Lillian Hack, program chairman, writes that the president of the Philadelphia Medical Society has invited members of the Philadelphia Dietetic Association to the inaugural banquet of the County Medical Society and to subsequent meetings during the year. In line with past custom, Miss Hack has prepared a booklet listing the program for the entire year.

Officers for the coming year are: president, Elda Robb, Ph.D., assistant professor of home economics, Temple University; vice-president, Miriam E. Gaige, Presbyterian Hospital; secretary, Sylvia E. Waide, Pennsylvania Hospital; treasurer, Frances L. Swenson, Mount Sinai Hospital. Executive Committee members are Marjorie E. Bacheller, Beaver College; Martha E. Tarbox, Pennsylvania Hospital; and Elizabeth Miller, Philadelphia General Hospital. Committee chairmen are as follows: History, Pearl Wright, Free Library of Philadelphia; Hospitality, Anne M. Fawcett, Institute of the Pennsylvania Hospital; Membership, Martha L. W. Swain, Public Education; Program, Lillian F. Hack, St. Christopher's Hospital for Children; Special Diets, Harriet Everts, Hospital of the University of Pennsylvania; and Publicity, Mary C. Eckhardt, Hospital of the University of Pennsylvania.

The first meeting of the new season was a picnic supper held at the College of Chestnut Hill on September 24 with Sister Mary De Sales and the home economics students as hostesses. The October 8 meeting was held at the Hahnemann Hospital, with Edith M. Barber, national publicity chairman, presenting a "Preview of the 1940 Convention." Guests were the student dietitians of all Philadelphia hospitals and the home economics students from all nearby colleges.

Catherine Roess of Jefferson Hospital was married on August 31 to Dr. Rowland S. Aronson, who is connected with Lankenau Hospital.

Alice Karslake, formerly of Temple University Hospital, was married to Mr. George W. Irmisch, and is now located at Monmouth Memorial Hospital, Long Branch, New Jersey. Marion L. Mowbray of the University of Pennsylvania Hospital has replaced Mrs. Irmisch at Temple.

Virginia Grey of Abington Memorial Hospital is now Mrs. George Baker.

Dorothy Mittelstadt of Presbyterian Hospital, was married on August 31 to Dr. Lewis K. Dean, a resident in surgery at the Presbyterian Hospital. Mrs. Dean is continuing in her position as chief dietitian at the hospital.

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During the World War Vegex was selected to aid in the prevention and relief of beriberi and other deficiency disorders among the Allied troops; was the pioneer product used in the study of the relation of the B vitamins to child growth, the promotion of lactation, gastro-enterology.

A scant teaspoonful of Vegex dissolved in a cup of hot water, makes an instant, delicious bouillon. A little Vegex added to the water in which vegetables were cooked is an economical soup stock. One part of Vegex creamed with about ten parts of butter or cream cheese makes a really delicious spread for sandwiches or toast.

A jar of Vegex and literature will be sent on request.

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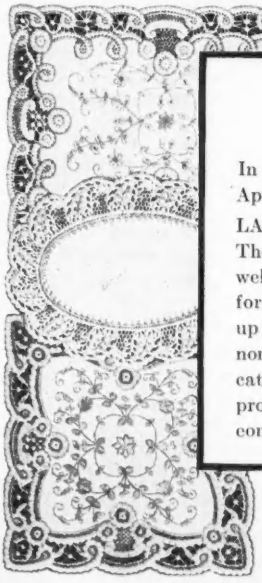

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Christine Haupt of Chester County Hospital was married on September 10 to Dr. Fred Winegar. Her position has been filled by Miss Schumburger, a recent graduate of Johns Hopkins.

Marjorie Euwer resigned from the University of Pennsylvania Hospital to be married on October 26 to Mr. Kenneth Self of Kansas City, Missouri. She has been replaced by Dixie Rudberg, a former member of the association.

Marion Bean, a staff member at Hahnemann Hospital, has returned to Cornell to work on her master's degree. Isabel Delaney, also of Hahnemann, has accepted a position at Beverly Hospital, Beverly, Massachusetts. Margaret Hogan and Margaret R. Blood have replaced Miss Bean and Miss Delaney.

Virginia Bounds and Frances Selzer have been appointed dietitians at Philadelphia General Hospital, taking the places of Vera Kerstell, who has accepted a position at Bellin Memorial Hospital, Green Bay, Wisconsin, and Mary Ann Carver who was married on August 11 to Dr. Leon Smelo of Pittsburgh.

Miriam Gaige, formerly of Philadelphia General Hospital, is now at Presbyterian Hospital. Frances Feigert, a recent student at Philadelphia General Hospital, has assumed Miss Gaige's duties.

Edna Oren, also of Philadelphia General Hospital, is now dietitian at Coatesville Hospital, Coatesville, Pennsylvania.

Mrs. Herbert Raynes (Jean Nick) has been appointed assistant to Miss Hainer at Drexel Institute. Jean Stevens from the University of New Hampshire is the new dietitian at the practice house of Drexel.

Roberta Mack, dietitian at West Chester Normal School for the past few years, has accepted a position as dietitian and member of the faculty at the University of Maryland.

Evelyn Bagenstose is now therapeutic dietitian at Germantown Hospital.

Wilma Miller has accepted a position as consultant dietitian with Dr. Gutschmidt of Philadelphia.

Pittsburgh Dietetic Association held an old fashioned Hallowe'en party for its first meeting this fall at the Magee Hospital Nurses Home, with Jeannette Morris, chief dietitian, as hostess. The party proved to be an excellent opportunity for the new members in the association to become acquainted with the older members.

Sylvia Levie, chief dietitian, Pittsburgh City Hospitals, Mayview, attended Columbia University summer school, enrolling in two courses, institution management and the field course at the New York Hospital.

Mary Alice Lamb, formerly assistant dietitian at Presbyterian Hospital, has gone to Leech Farm as chief dietitian. Mabel O'Donnell, a former student at Shadyside Hospital, Pittsburgh, and more recently dietitian at City Hospital, Sterling, Illinois, succeeds Miss Lamb.

Edith Langille has resigned her position as chief dietitian, Allegheny General Hospital. Ruth Sylvester succeeds Miss Langille.

Bernice Pearson, graduate of Carnegie Institute of Technology, has been appointed assistant nutritionist for the Pittsburgh Public Health Nursing Association.

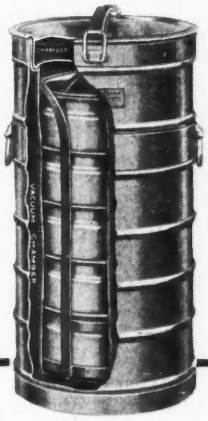
Many of the student dietitians of West Penn Hospital, upon the completion of their course, accepted responsible positions. D. Mabel Swisher is now with the Union Protestant Hospital, Clarksburg, West Virginia. Stella Smetlzer is dietitian in the Kings Daughters Hospital, Ashland, Kentucky. Eleanore Marvin is now with the Providence Hospital, Beaver Falls, Pennsylvania.

Dorothy Reiter has been appointed dietitian at the Osteopathic Hospital, Grove City, Pennsylvania. Charlotte Savage is associated with the Jameson Memorial Hospital, New Castle, Pennsylvania. Both were student dietitians at the Shadyside Hospital.

Many members of the Pittsburgh Dietetic Association attended the nutrition institute for the state nurses in this area, conducted by Mrs. Anna dePlanter Bowes, chief, Division of Nutrition, Pennsylvania Department of Health, on September 25. Ruth Roth and Eleanore Faber, staff nutritionists, assisted Mrs. Bowes.

An addition to the list of 1940 41 officers previously published is that of Helen Wolverton, Homestead Hospital, as chairman of the Diet Therapy Section.

Wisconsin Dietetic Association. In a letter from the president, Mrs. Ethel Keating, in the Fall issue of *The Wisconsin Dietitian*, writes that the association's Executive Board has voted to continue a series of broadcasts from a Milwaukee station in which dietitians will be



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America's only all-metal high vacuum insulated food and liquid carriers

A definite aid to dietitians in servicing large daily feeding routines

Particularly in today's trend in large institutions and hospitals to the economies of 'central kitchen' cooking, AerVoiDs are a definite aid to dietitians, filling a need that no other equipment meets so adequately by their ready portability and other practical features for servicing hot foods a distance from where they are cooked.

One to five hot foods in a single AerVoiD carrier

Each of the four standard sizes of AerVoiD Food Carriers can be obtained with a food pan assembly of either 1, 2, 3, 4, or 5 food pans to keep hot or transport from one to five different foods in a single AerVoiD carrier. No other carrier combines vacuum insulation with this important practical feature.

Soup and coffee carriers too

AerVoiD Convertible Soup and Liquid Carriers with detachable side faucet are adaptable for dispensing hot coffee a cup at a time by using the detachable side faucet or for servicing hot soups by ladling through the wide neck opening.

Every dietitian should post herself by writing today for illustrated circular, "The Modern AerVoiD Way"

AerVoiD Features

- Easy portability for indoor movement of Hot Foods to distant points of service from central kitchens!
- High vacuum thermal efficiency that keeps cooked foods hot, palatable and appetizing for hours, indoors or outdoors!
- No loose parts to become lost... no mechanism to get out of order ... requires no piping, wiring or installation!
- The lowest operating and maintenance cost of any equipment for keeping foods hot... practically nothing!
- Available in four sizes with various food pan assemblies... provides quick adjustment for varying needs.

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interviewed on current nutritional problems. It is planned to run 13 broadcasts. Twenty-six talks by dietitians were given over WHA in Madison last year and are now on file in the library of the American Dietetic Association.

Mrs. Keating also writes that the state association is considering a plan of legislation which will limit the use of the word "dietitian" to those worthy of the title. The plan is being considered in order to combat the use of the title "dietitian" by nonprofessional persons in so-called "health clinics" and elsewhere.

News from our Advertisers and Exhibitors. *Mead Johnson & Company* call attention to the quick action of Oleum Percomorphum in preventing skeletal deformities. No antiricketic substance will completely straighten bones that have become misshapen but Oleum Percomorphum can be depended upon to prevent ricketic deformities if given early and in adequate dosage. This is not true of all antiricketic agents, many of which are so limited by tolerance or bulk that they cannot be given in quantities sufficient to arrest the ricketic process promptly. Thus bones are not sufficiently calcified to bear weight or muscle-pull and hence become deformed.

Dietitians may be reminded that the Consumer Service Department, *General Foods Corporation*, has a sheet available which details the ingredients used in all General Foods products. It also lists their products suitable for allergy diets.

Penick & Ford, Ltd., makers of Brer Rabbit molasses, now have a booklet available upon request which contains a number of recipes in which that nutritionally good and tasty food, molasses, may be incorporated. The report of the study on the nutritional availability of iron in molasses is also available for distribution.

One of the most artistic and attractive little recipe books yet seen is that distributed this year by *Libby, McNeill & Libby*. Within a patriotic and pleasing circla binding are several excellent culinary suggestions and delightful illustrations in color.

Mead Johnson & Company's new educational-to-the-public film "When Bobby Goes to School" may be exhibited to the public by any licensed physician in the United States upon the endorsement by any officer of his county medical society. "When Bobby Goes to School" is a 16-mm. sound film, free from advertising, dealing with the health appraisal of the school child, and may be borrowed without charge or obligation on application to the distributor, Mead Johnson & Company, Evansville, Indiana.

A new four-story plant has been put into operation in Brooklyn, New York, by the *Continental Coffee Company* to implement production and the handling of increasing accounts in the East. The new plant, the largest in the Continental Coffee system, has been equipped with the latest machinery to provide maximum efficiency and economy in packing, handling and shipping. All accounts east of Cleveland are now being handled by the new eastern headquarters. The company's plant expansion makes possible the servicing of accounts in Greater New York which up to now has been impracticable. Among the New York firms serviced by the Brooklyn plant are the Toffenetti Restaurants and the Park Central Hotel.

During senescence, many conditions are prevalent which tend to prevent the adequate utilization of a well-balanced diet. Degenerative processes, voluntary or required dietary restrictions and organic disease, especially if it occurs in the gastro-intestinal tract, all play an important rôle in interfering with proper digestion, absorption and assimilation. In this manner they pave the way for nutritional deficiency states. An adequate, energy-producing and nutritionally protective diet is an essential requirement during old age and a fortified food drink such as *Cocomalt* supplies essential vitamin and mineral elements and serves as a flavoring agent to act as an incentive to those individuals in drinking the required amounts of milk. According to a recent report, 30 senile individuals having a variety of gastro-intestinal disturbances were given Cocomalt as a food drink. The product was well liked, well tolerated and did not cause any aggravation of their symptoms. In most instances, during one month of observation, there was an improvement in the red blood cell count and per cent hemoglobin, an increase in appetite and a moderate gain in weight, and the ability to tolerate milk was greatly enhanced by its use.

Armour and Company, Union Stock Yards, Chicago, is now distributing Marie Gifford's "Kitchen Service." Bulletin No. 27 tells how

The Newer Concepts of Meat in Nutrition

Meat
and the Mineral Requirements of Man

THE mineral elements of the body are as varied in their functions as they are in the proportions in which they are present in the tissues. Not only do inorganic elements enter into the composition of the supporting framework of the body, but they also take part in the formation of important organic compounds, such as nucleoproteins and phospholipids, thus being an integral part of all cell structure. The minerals circulate in the body fluids as salts, influencing the function of tissues and aiding in the maintenance of the normal acid-base balance. They act in the plasma to control the osmotic interchange necessary for vital processes.[1]

Among the minerals required in comparatively liberal amounts for adequate nutrition are phosphorus, iron, calcium, iodine, sodium, potassium, magnesium, chlorine, sulfur and probably copper. Others called "trace elements"—present in the body in such small amounts that in blood examination they may be detected only by spectroscopic method—are nevertheless of importance.[2, 3, 4]

Civilized man ordinarily can secure the minerals he needs from his food, in spite of the losses incurred through refining and cooking. Nutritionists are agreed that meat is a reliable and outstanding source of a number of the inorganic elements. According to Sherman[5] the average daily requirement for an adult is 1.32 grams of phosphorus and 0.012 grams of iron. Meat, being a rich source of these minerals, can supply a considerable part of this allowance. An average serving (120 grams) supplies about one-sixth of the phosphorus requirement and almost one-fifth of the iron requirement. Meat also provides potassium, sodium, sulfur, magnesium, chlorine, and many trace elements. In addition, it furnishes copper, which animal experiments have shown is necessary in the metabolism of iron.

In the presence of disease affecting the gastrointestinal tract, particularly colitis, diverticulosis, regional enteritis and gastritis, meat—because of its ease of digestibility and the minerals it contains—may be included in the diet in liberal quantities to help guard against mineral deficiency. Because of its high iron and copper content, the value of meat in the prevention of secondary anemia is definitely recognized.

The daily consumption of meat, in generous amounts, will do much to assure an adequate intake of a number of the important minerals.

1. Best, C. H., and Taylor, N. B.: The Physiological Basis of Medical Practice, Baltimore, William Wood & Company, 1937, p. 38.

2. Boyd, T. C., and De, N. K.: Some Applications of the Spectroscope in Medical Research, Indian J. M. Research *20*:789 (Jan.) 1933.

3. Rose, M. S.: The Nutritional Significance of Some Mineral Elements Occurring as Traces in the Animal Body, Yale J. Biol. & Med. *4*:499 (Mar.) 1932.

4. Sheldon, J. H.: The Mineral Basis of Life, Brit. M. J. *1*:47 (Jan. 13) 1934.

5. Sherman, H. C.: Chemistry of Food and Nutrition, Fifth Edition, New York, The Macmillan Company, 1937, p. 520.

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute
CHICAGO

(In writing to advertisers, please mention the journal—it helps.)

to make the most out of ham, including left-overs, accompaniments and recipes for sliced and whole hams. The folders are conveniently punched for note-book fillers.

The Consumer Service Department of *General Foods Corporation*, New York, are distributing an admirable collection of booklets and circulars of interest to all directors of food services. One concerns "A Plan for the Day's Choice of Food", another is the "Food Chart", earlier editions of which have been noted under this section. Others are as follows: a graph showing activities of the Consumer Service Department; "How to Make Good Coffee", which includes detailed information on methods, equipment, service and recipes; "The Latest Cake Secrets" with 64 pages of recipes using Swansdown flour, charts, menu suggestions, beautiful illustrations in color, and probable causes of cake troubles; Baker's "Famous Chocolate Recipes" selected by Frances Lee Barton, covering 64 pages of recipes and data on chocolate, chocolate cake and more recent chocolate products, using the familiar Walter Baker's chocolate; "10 Steps to Perfect Baking" or how to use Calumet Double-Acting baking powder and Swansdown flour in making delicious baked products; "The Calumet Book of Oven Triumphs" with recipes for pies, waffles, cake, etc., and "My Party Book of Tested Chocolate Recipes", a title which is self-explanatory, by Miss Barton. Included also are "Marvelous Meals with Minute Tapioca"; "Southern Style Coconut Recipes", using the famous Baker's coconut; "Chocolate Candies You Can Make", again with Baker's chocolate; and finally two booklets on "Jell-O", with recipes for its use.

National Canners Association, Washington, D. C., through its Home Economics Division, is distributing a folder entitled "School Lunch Recipes with Canned Foods", in quantities to serve 25. Menus are included and portion sizes.

Mary Hale Martin, director of the Department of Home Economics, *Libby, McNeill & Libby*, Chicago, in the September issue of "Kitchen Chatter", presents various interesting recipes incorporating the popular Libby products.

John Sexton & Company has just introduced in individual envelopes the finest quality crystal clear gelatin, each envelope to make a pint of jelled gelatin. The package is primarily produced to meet the demand for gelatin served in fruit juices for certain purposes. The selling price per carton of 120 envelopes is $4.50 delivered.

Mary Pearl, home economist for the *Maltex Company, Inc.*, Burlington, Vermont, has for distribution a variety of teaching material including a height-weight wall chart, a note-book size sheet with graphs for weight record, colored wall posters, individual breakfast chart, food value card, daily diet record, and a set of 12 recipe cards for serving 100. This company also provides directions for two health plays for presentation by grade children.

Have You Heard?

To dietitians who use decentralized service for patients:

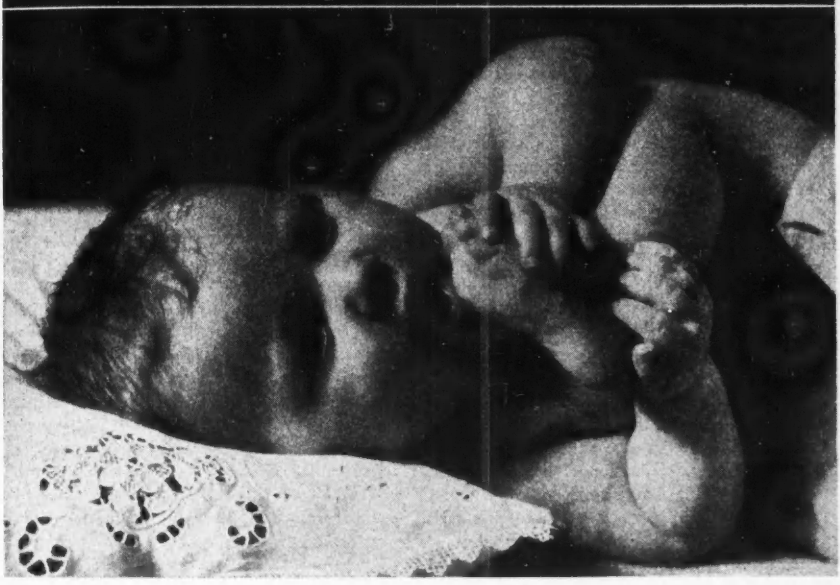
In preparing baked and escalloped dishes, do you put the correct amount for each ward into the pan before baking, so as not to have to transfer it afterward? It is more efficient and less messy to do it that way, but it creates the problem of labelling each pan for the unit to which it is to be sent. Paper labels may scorch, so various types of metal tag have been tried. A very successful aluminum label may be made by the hospital engineer out of worn-out baking pans and light weight straight-sided sauce pans. The directions for making are as follows:

Cut a flat piece of aluminum three inches long by one inch wide. Starting three quarters of an inch from one end, cut two parallel slits half an inch apart and a quarter of an inch from the edges of the metal. At this center line, make a cut between the two slits, and bend back the strip of aluminum thus loosened, forming a hook to fit over the edge of the pan. Stamp the number of the ward or unit on the upper end of the label.

➢➢➢

The suggestion is made in the section on housekeeping in *The Hospital Manual of Operation* by Morrill, that materials discarded by the linen room be dyed before being used for cleaning cloths. This works very well.

Are fortified cereals a satisfactory source of iron for infants?



Experiments on the availability of iron in fortified cereals were recently concluded on infants in a well-supervised nursery. These experiments indicated that "New 5-Minute" Cream of Wheat fed to infants between three and five months of age as their first soft-solid food, acted as a satisfactory source of iron. This was judged by the reticulocyte response by the seventh to tenth day after this feeding was begun, as well as by the increase in erythrocyte and hemoglobin levels.

In addition, it was found that the iron of "New 5-Minute" Cream of Wheat is essentially as available as medicinal iron. The report* concluded that "New 5-Minute" Cream of Wheat should be of benefit in the prevention of, as well as relief from, iron deficiency anemia, which is so commonly present in infants after the third month of life.

Besides iron, "New 5-Minute" Cream of Wheat has added phosphorus, calcium, and Vitamin B_1. It also has a somewhat richer flavor than "Regular" Cream of Wheat, a cereal which has been recommended by many physicians for 45 years. It cooks to full digestibility — even for infants — in only five minutes of boiling. No increase in price. Both "New 5-Minute" Cream of Wheat and "Regular" Cream of Wheat are available at most food stores.

May we send you clinical samples of "New 5-Minute" Cream of Wheat? Write: The Cream of Wheat Corporation, Dept. S11, Minneapolis, Minnesota.

*Complete report soon to be published.

Mineral and Vitamin content of "NEW 5-MINUTE" CREAM OF WHEAT in average servings of 20 grams	
PHOSPHORUS	118.0 milligrams
CALCIUM	101.0 milligrams
IRON	8.5 milligrams
VITAMIN B_1	11.0 Int'l Units

"Cream of Wheat" Reg. U.S. Pat. Off.

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The linen room staff tears the old sheets, gowns, etc., into pieces of a size suitable for cleaning cloths and sends enough to the laundry at a time to load one washing machine. They are dyed in the washing machine at very slight cost. It is then easy to keep them separated from hospital linens, and employees are more easily taught not to use anything other than officially discarded material, which is then easily recognized, for cleaning purposes.

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There is available a neat, compact machine which sells for approximately one hundred dollars and which doubles the speed of a wall washing crew, at the same time giving excellent results. One man can operate the machine, but a crew of from one to four can work efficiently with one machine. With four men, the machine works to full capacity. One man is on a scaffold or ladder, washing and rinsing the ceiling and upper wall. The second man washes and rinses the lower wall, and keeps the machine supplied with clean cloths. The other two men do not work with the machine. They move furniture, wash window frames, radiators, and other surfaces not flat enough for the machine, and apply the finishing coat of starch, if starch is to be used. Since the cost of materials used in wall washing is slight, the labor cost is practically the whole cost—and this is cut in half by investment in the machine, which therefore soon pays for itself.

No connections are necessary, since the machine is entirely hand operated.

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A hanging bracket on the steam kettle helps prevent accidents by holding the pot, so the cook does not have to balance a hot pot on the edge of a hot steam kettle with one hand while he ladles with the other. The shelf part of the bracket is made of metal grids, curved at the back to fit the curve of the kettle. It has two supports which hook over the side of the kettle. It should be light, to be readily handled, and strong and rigid. It should be of such size that it fits the largest pot likely to be used to receive food from the steam kettle, and so that the top of such a pot comes to the level of the top of the kettle. Since steam table insets are generally used for this purpose, it need not be very large or cumbersome.

Since the curve of the bracket is the same as the curve of the kettle, each size of steam kettle must have its own bracket.

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It seems safe to assume that the modern dietitian prefers autoclaving baby bottles and other formula room equipment to the older method of wet sterilization, and that this method is used wherever there is an autoclave available. Since it is not feasible for most hospitals to have an autoclave in the formula room, and since there seems to be a feeling that contact between nursery and surgery increases nursery infections, it is well to look toward the delivery room or nursery sterilizing unit for this service. The nurses will find it very little trouble to run an extra load through the autoclave—much less than the trouble of trying to handle hot, wet equipment and keep it sterile after boiling. The method is as follows:

All the equipment needed, such as graduates, spoons, funnels, etc., is washed and dried. It is then wrapped in a neat package in a piece of heavy muslin a yard and a half square. Gowns, masks, and towels may be included in the same bundle. This is autoclaved and returned to the formula room, where it is kept wrapped until needed. Then it is laid on the work-table and opened in such a way that the inside of the wrapper remains sterile and can be used as a table cover. It is well to keep an extra "formula pack" for emergencies, being sure that the equipment is rotated or that none of it stays on the shelf more than a few days without re-autoclaving.

The bottles are washed, capped, and put into racks, and need not be handled again, as they can be autoclaved and delivered to the formula room, and filled and delivered to the nursery, all in the racks. The type of cap used is most important, as it must protect the top of the bottle and be permeable to steam. One simple cap is a square made of two thicknesses of tissue paper, fastened over the top of the bottle with an ordinary elastic band. It autoclaves well and can be removed when the bottle is filled, and replaced without contamination.

Incidentally, bottles and equipment which are autoclaved avoid the scale to which they are subject when boiled in hard water.

Some hospitals find it convenient to prepare and bottle the orange juice in the formula room, where sterile equipment is available and hands are scrubbed.

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WHO'S WHO IN THIS ISSUE

Marion D. Floyd, B. S., home economics, Simmons College, is a graduate of the student dietitian course, Peter Bent Brigham Hospital. She was formerly dietitian at Long Island Hospital, Boston, and assistant administrative dietitian, Massachusetts General Hospital, where she is now chief of the Dietary Department, which includes Phillips House, Baker Memorial, and the Food Clinic in the Outpatient Department. Miss Floyd is also supervising dietitian at the Massachusetts Eye and Ear Infirmary.

Dorothea Turner, A.B., University of Illinois; M.S., University of Wisconsin, was formerly instructor, Department of Home Economics, University of Wisconsin, and head dietitian, Methodist Hospital, Des Moines. At present she is teaching dietitian, Department of Medicine, University of Chicago.

Quindara Oliver Dodge, noted under this section for March 1939, is associate professor of institutional management, Simmons College, and director, Vocational Training Department, Women's Educational and Industrial Union, Boston.

A. Hughes Bryan, B.S., Harvard College; M.D., Harvard Medical School, is instructor in medicine, Department of Medicine, University of Chicago. His research interests have included studies of the anterior pituitary growth hormone, the mode of action of diuretic drugs, the measurement of the total calories and the water balance by means of studies of insensible perspiration, and, more recently, the metabolism of ascorbic acid. **Dorothea Turner** has been noted elsewhere in this section. **Gertrude Lotwin,** B.S., Stout Institute, interned in dietetics at the University of Chicago Clinics, where she is now research dietitian. **Ruth L. Huenemann,** B.S., University of Wisconsin, also interned in dietetics at the University of Chicago Clinics where at present she is nutritionist for the Walter G. Zoller Memorial Dental Clinic.

Martha Potgieter, Ph.D., is the author of a series of three papers on taro appearing in this and the June–July and August–September JOURNAL.

Laura Comstock, 1933 chairman of Community Education Section; 1934–35 president; 1938 chairman of Nominating Committee; and 1936–40 member of the Journal Board, American Dietetic Association; was noted under the Editorial Section of this JOURNAL for November 1934. Since 1922 Miss Comstock has been nutrition adviser in the Medical Department of the Eastman Kodak Company, Rochester, New York, and is the author of several papers pertaining to the nutrition of industrial workers.

Mary M. Harrington was chairman of a subcommittee on kitchen equipment of the Administration Section at the time the paper appearing in this issue was prepared. Miss Harrington has been a frequent contributor to this JOURNAL and was noted under this section for January and August-September 1940.

Henderika J. Rynbergen, a contributor to this JOURNAL for August-September 1938, and noted under this section for that issue, is a native of Holland. Miss Rynbergen is instructor of nutrition in the School of Nursing of the New York Hospital, and president of the New York State Dietetic Association.